### personal pearl"

easy tutorial user's guide

pearlsoft salem, oregon usa



## UPDATE SHEET FOR PERSONAL PEARL

### UPDATE SHEET FOR PERSONAL PEARL

### ALL USERS:

Please note the following updates in your Personal Pearl manuals.

in Easy Tutorial User's Guide:

### SECTION 1

- p.13, Part 3 You will be asked to insert the DESIGN FORMS diskette before entering your name.
- 2. p.23, Part 7, last paragraph To return to the DESIGN FORMS diskette use this procedure: Press the ESC key until you get the system prompt A>. Then put the DESIGN FORMS diskette into Drive A, type PEARLDF and press RETURN to start the DESIGN FORMS program.
- 3. p. 23, Parts 8 and 9 There is no "LABELS" listing on REPORT. LABELS is designed during the advanced tutorial session.

### SECTION 2

4. p. 59
The last paragraph says that "...you will be returned to the Report Directory." This does not occur. Instead, you are returned to the Service Directory.

### SECTION 3

5. p. 66 The last "USER:" prompt should say "Press ESCAPE" instead of "Press RETURN".

### SECTION 4

6. p. 71 After you press RETURN following "After FILE NAME FOR REPORT", you will exit to the Produce Reports menu.

### SECTION 5

p. 80
 In all references to ctrl/Z, press ctrl/Z twice.

Part Number 7G01601-00

### in Advanced Tutorial User's Guide

8. pp. 41-44
The screens printed on these pages have errors and will be different from those on your program diskette.

### SINGLE DENSITY USERS:

The ENTER DATA (Diskette 4) screens for PEARLED do not display the Control Key menu because the overlay file would not fit on this diskette. If you want to add the control key menu on the ENTER DATA screens, PIP the PRLHELP.TXT file from Diskette 7 to your PROGRAM and DATA diskette. This solution, however, will decrease the diskette space available for your data so you may wish to refer to p. 13 of the Personal Pearl Reference Manual for the Control Key menu instead.

### DOUBLE DENSITY USERS:

The Personal Pearl documentation is oriented to the single density user. Double density users may use the single density program diskettes with double density data diskettes. To do this, follow the SYSGEN instructions on p.10 of the Easy Tutorial User's Guide but be sure to use your CP/M double density diskette to SYSGEN.

If you use the double density setup below, please be aware that some of the information in the user's guides will be slightly different due to this setup.

Double density users can create the following seven diskettes in order to minimize the number of diskette swaps during the operation of Personal Pearl. It is important to follow the instructions exactly, as only the PEARL.AOO file on Diskette 1 should be PIPed to the new diskettes you are creating.

Use PIP on your CP/M System diskette to transfer files. After you enter PIP and have the "\*" prompt, put a Personal Pearl Diskette into Drive A and a blank, formatted diskette into Drive B. Whenever you put a new diskette into Drive B, it will be necessary to use "^C" to tell the system of this change. The following instructions tell you when to use ^C.

To create your new diskettes:

1. DESIGN and INSTALL FORMS

Put a blank, formatted disketts into Drive B. Put Personal Pearl Diskette 3 into Drive A. Enter B:=A:\*.\*[V] <cr>

Put Personal Pearl Diskette 1 into Drive A. Enter B:=A:PEARLDF. (V) <cr>
B:=A:PEARL.AOO(V) <cr>

Put Personal Pearl Diskette 7 into Drive A. Enter B:=A:PRLHELP,TXT[V] <cr>

Remove the diskette from Drive B and label it. It contains these files:

6 K	PEARLDF.001	11K
2 K	PEARLDF.002	7 K
3 K	PEARLDF. 011	4 K
8K	PEARLDF.012	6 X
5 K	PEARLDF.013	5 K
3 K	PEARLDF.COM	21K
4 K	PEARL. AOO	16K
8K	PRLHELP.TXT	27K
4 K		
9 K		
5 K		
21 K	TOTAL BYTES USE	): 175K
	3K 8K 5K 3K 4K 8K 4K 9K	2K PEARLDF.002 3K PEARLDF.011 8K PEARLDF.012 5K PEARLDF.013 3K PEARLDF.COM 4K PEARL.AOO 8K PRIHELP.TXT 4K 9K 5K

Put the CP/M System diskette into Drive A and press <cr>. At the A> prompt, press \*C, then type PIF and after the PIP prompt "\*" appears, remove the CP/M System diskette.

### 2. DESIGN and INSTALL REPORTS

Put a blank, formatted diskette into Drive B. Put Personal Pearl Diskette 2 into Drive A. Enter B:-A:PEARLDR.\*[V]<cr>

Put Personal Pearl Diskette 3 into Drive A. Enter B:=A:\*.\*[V]<cr>

Put Personal Pearl Diskette 1 into Drive A. Enter B:=A:PEARL.AOO[V]<cr>

Put Personal Pearl Diskette 7 into Drive A. Enter B:=A:PRLHELP.TXT[V]<cr>

Remove the diskette from Drive B and label it. It contains these files:

PEARLDR.001	6 K	PEARLI.005	5 K
PEARLDR.002	1 O K	PEARLI.006	3K
PEARLDR.003	7 K	PEARLI.012	4 K
PEARLDR.004	3 K	PEARLI-013	8K
PEARLDR.011	4 K	PEARLI.014	4 K
PEARLDR.012	6 K	PEARLI.015	9 K
PEARLDR.013	3 K	PEARLI.017	5K
PEARLDR.COM	23K	PEARLI.COM	21K
PEARLI.001	6 K	PEARL-AOO	16K
PEARLI.002	2 K	PRLHELP.TXT	27K
PEARLI.003	3 K		
PEARLI.004	8K	TOTAL BYTES USED:	183K

Reload the PIP file from the CP/M System diskette, using ^C, as above.

### 3. ENTER DATA

Put a blank, formatted diskette into Drive B. Put Personal Pearl Diskette 4 into Drive A. Enter B:=A:PEARLED.\*[V] <cr>

Put Personal Pearl Diskette 1 into Drive A. Enter B:=A:PEARL.AOO[V] <cr>

Put Personal Pearl Diskette 7 into Drive A. Enter B:=A:PRLHELP.TXT[V] <cr>

Remove the diskette from Drive B and label it. It contains the following files:

PEARLED.001 PEARLED.002	16K	PEARL.ACO PRLHELP.TXT	16K 27K
PEARLED.004	9 K		
PEARLED.011	15K		
PEARLED.012	3 K		
PEARLED.021	2K		
PEARLED.COM	14K	TOTAL BYTES USED:	118K

Reload the PIP file from the CP/M System diskette, using "C, as above.

### 4. PEARLUP and FILE MAINTENANCE

Put a blank, formatted diskette into Drive B. Put Personal Pearl Diskette 6 into Drive A. Enter B:-A:PEARLPM.\*[V] <cr>

Put Personal Pearl Diskette 7 into Drive A.
Enter B:=A:IHSTALL-DAT[V] <cr>
B:=A:PKARLUP.COM[V] <cr>
B:=A:PKLHELP.TXT[V] <cr>

Put Personal Pearl Diskette 1 into Drive A. Enter B:=A:PEARL.AOO[V] <cr>

Remove the diskette from Drive B and label it. It contains these files:

	4 5 10	INSTALL.DAT	1 K
PEARLFM.001	15K	TMOTADD - DAT	
PEARLFM.002	18K	PEARLUP.COM	21 K
PEARLFM.003	18K	PRLHELP.TXT	27K
PEARLFM.004	17K	PEARL.ACO	16K
PEARLFM.COM	15K		
PERRUPA: COR	171	TOTAL BYTES USED:	148K

Reload the PIP file from the CP/M System diskette, using ^C, as above.

### 5. PRODUCE REPORTS

Put a blank, formatted diskette into Drive B. Put Personal Pearl Diskette 5 into Drive A. Enter B:=A:PEARLPR.\*[V] <cr>

Put Personal Pearl Diskette 1 into Drive A.
Enter B:=A:PEARL-AOO[V] <cr>
B:=A:PEARLPR-OO4[V] <cr>

Put Personal Pearl Diskette 7 into Drive A. Enter B:=A:PRLHELP.TIT[V] <cr>

Remove the diskette from Drive B and label it. It contains these files:

14K	PEARLPR.012	3 K
18K	PEARLPR.COM	17K
16K	PEARL. ACC	16K
15K	PRLHELP.TXT	27 K
12K		
2K	TOTAL BYTES USED:	140K
	18K 16K 15K 12K	18K PEARLPR.COM 16K PEARL.AGO 15K PRLHELP.TXT 12K

Reload the PIP file from the CP/M System diskettee, using °C, as above.

### 6. PSORT

Put a blank, formatted diskette into Drive B. Put Personal Pearl Diskette 7 into Drive A. Enter B:=A:PSORT.\*[V] <cr>

Remove the diskette from Drive B and label it. It contains these files:

PSORT.001 9K
PSORT.002 10K
PSORT.COM 12K TOTAL BYTES USED: 31K

Reload the PIP file from the CP/M System diskette, using  ${}^{\circ}C$  as above.

### 7. STARTER LIBRARY

~

Put a blank, formatted diskette into Drive B.
Put Personal Pearl Diskette 2 into Drive A.
Enter B:=A:FARLEY.ROO[V] <cr>
B:=A:INVOICE.ROO[V] <cr>
B:=A:PEOPLE.DIR[V] <cr>
B:=A:PHONE.ROO[V] <cr>
B:=A:SCHED.ROO[V] <cr>

Put Personal Pearl Diskette 4 into Drive A.
Enter B:=A:CALENDR.\*[V] <cr>
B:=A:PEOPLE.SOO[V] <cr>

Put Personal Pearl Diskette 7 into Drive A. Enter B:=A:PEARL.DIR[V] <cr>

Remove the diskette from Drive B and label it. It contains these files:

1 K 1 K PEOPLE.DIR CALENDR.DIR PEOPLE.SOO 3 K CALENDR.SOO 2K PHONE . ROO 2K FARLEY.ROO 3K INVOICE. ROO 2K SCHED . ROO 2 K 1 K PEARL.DIR TOTAL BYTES USED: 17K



## Control Key Commands ENTER DATA AND PRODUCE REPORTS

### Cursor Control

Function	Character left Down one fine Up one fine Character right End of data area Start of data area Next data area	
carl key	O×movm×C → (lab)	

### Insert and Delete

Function	Toggle on/off character insert	Delete character at cursor positio	Delate from cursor to end of word	Delete data in current deta svea
ctst key	>	0	۰	>-

5 -

## Scrolling and Paging

Function	Page forward
ctrl key	o

### Browsing Indexes

Function	Yogge on ecit mode Move cursor to inclaved data area, enter data into area and then press return to position index.	Display next record	Display previous record	ofe	Function	Datale current percent
ctrl key	<b>85</b>	₩	₹	Other Controls	ctrl key	•

Function
ctrl key

Function	Delete current record	Summon HELP text	Toggle add/edit mode	Prunt current form	Dupicate previous item	Replace current record on file
can key	0	j o	œ	a.	2	>

## File Maintenance PEARLFM

There are three main uses for file maintenance: 1) recovering unused disk space; 2) updating the index with form changes, and 3) maintening separate design and production disks. To accomplish these lasks, six functions are provided:

## FILE SUMMARY DATA

Displays Re size and amount of unused space, version number and data record count.

### REBUILO INDEX

Recreates index from the data file when design changes are made to indexed data areas. Restores file integrify in the event of malfunction.

COMPACT DATA FILE

Recovers unused disk space, verties file integrity.

### CREATE DATA FILE

This function will create a new empty production data file.

Applies form design changes to production disks. Applicable only whom maintaining separate design and production disks. TRANSFER FORM CHANGES

TRANSFER PROGRAM CHANGES

Applies form and report changes to production disks. Applicable only when maintaining separate design and production disks.

## Changing Form and Report Design

When a form is reinstalled, it affects other parts of the system. Any reports which use information from the form must also be reinstalled. Similarly, if the form shares information with another form, that form must also be reinstalled.

Form changes involving data areas defined as indexed areas will require that the index for the file be rebuilt.

Messages will display in PEARLED and PEARLPR if file maintenance is required

## Disk File Types Used by PERSONAL PEARL

Form directory	Form design information	Main data file	Index file	Data dictionary file	Report directory	Report design information	Report dictionary file	temporary work file	temporary work life	temporary work file	lemporary work file	lemporary work file	hemoorary work file
PEARLIDIR	(form name).500	(form name) D00	(form name) E00	(form name).L00	(lorm name) DIR	(report nama) ROO	(report name):M00	(form name) 000	(form name).K00	(form name) T00	(form name) V00	(form name) P00	fform name) F00

In most cases, temporary work files are automatically deleted when they are no fonger needed. In some configurations work riles may be left on disk by the system. Temporary work riles may be deleted if encountered.

# personal pearl"

## reference card



INTERNATIONAL CORPORATION 864 Promontory Place SE Salem, Oregon 97302 HELATIONAL SYSTEMS division of

## SYSTEM MAIN PROGRAMS

System Configuration and Installation This program uses the information in the text file INSTALL.DAT to configure the system to match the hardware environmen. Use a text extent to change configuration data in the INSTALL.DAT file for nonstandard setups. This program must be non to install the distributed PEARI, program set before they will operate.	Design Forms Used to design data input forms, or to modify existing forms.
PEARLUP	PEARLOF

PEAPLOF Cesign Forms Used to design data input forms, or to modify existing forms	Design Reports Used to design reports, or to modify existing reports.	Install Forms and Reports
APLOF	PEARLUR	PEARU
ž.	Ÿ.	2

and installed. Use PEARLED to add or edit records in a date file, perform queries, or to print a single form to the printer.	uce Reports  This is the program which produces designed and installed reports. PEAR_PR includes setting the runtime title, setting the record section ranges, directing output to devices, and setting
and installed Lu perform querries	PEARLPR Produce Reports This is the pro- reports. PEARLP
	EARLPR

This is the program which produces designed and installed reports. PEAR_PR includes setting the runtime title, setting the record selection ranges, directing output to devices, and setting page formatting.	Fig. Mainterance provides utilities for rebuilding inclexes, compressing data files, creating new data files, exam ning file status, and maintaining separate design and production disks.	Sort Unity This program is called automatically from PEARLPR as needed, PSORT may not be executed directly but must be called by PEARLPR Sort sequence is set during report design in PEARLDR
	PEARLFW	PSORT

## Contr

	PORTS
	IGN RE
mands	ND DES
E CO Sc	NHMS A
troi Key	GN FC

Cursor Control

Function	Home cursor	Character eft	Character right	Line up	Line down	Word left	Word nght
tri key	<	60	٥	w	×	<	u.

JUCTOR
ũ
Ze.
ĕ

Insert and Delete

Insert character mode toggle on/off	Insert one blank fine	Delete character at cursor position	Delete from cursor to end of word	Delete cursor line
>	z	တ	F	>

## Scrolling and Paging

Function	Page lorward (group forward in fist report design)	Page backward (group backward in list report design)	Scroll up	Scroll down	Scroff up from cursor position to top of screen
ctrl key	O	Œ	72	*	>

### Other controls

Function

clrl key

Ignore edits and exit design step Deleta enby from form or report directory	Save and exit Summon HELP text Select data area for definition	Print layout report (in step 1) Highlight indexed areas (in step 3) Highlight other form references (in step 4)
00	O B	• • •

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## DESIGN FORMS AND DESIGN REPORTS, Step 1 Formatting Data Areas

Character Areas
Use undescoves to indicate data areas Separate cata areas from background text with blanks. Background text may be used for punctuation. After a data area has been named in step 2 the spaces separating the data area from the background may be removed.

### Oate Areas

Use "mm/dd/yy" to formal a date type data area

Numeric Arebs
Numeric areas may be formatted with the following punctuation: may be used to group digits indicates decimal point indicates digit position

in the first position, provides a loved dollar sign in the first two positions, provides a floating dollar sign. in the last position, forces a traking minus sign

example \$ \$999.999 this area will have a floating dollar sign, a trading mutor finegular and will handle numbers up to one million dollars. A comma wal group fine agits by linees. Amounts will be rounded oil to the nearest cent

## Computations

## DESIGN FORMS AND REPORTS, Step 2

## Operators in order of execution

- muliplication
  - addition

Parenthesis, "(" and ")" may be used to nest expressions

Nesting

## External References

Data areas from other forms may be used in computations if a path has be created to the external form. To reference the numeric data area from the other form prefix its name by the name of its form followed by a period.

### example:

TAX \* ((HOURS \* BIPRITH, RATE) - DEDUCTE)

in this example, the (external) other form, EMPMSTR is referenced.





easy tutorial user's guide

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### A LETTER FROM THE PRESIDENT

Dear PERSONAL PEARL Owner:

Mankind has traveled thousands of years to find an end to brutality and hunger, and a beginning to human fellowship and the mutual development of an advanced, nurturing civilization. The Industrial Age brought the power to control the world. Now, the Electronic Age has brought the power of computers to analyze and to aid understanding. Through scientific inquiry or business analysis, the world is opening to human understanding. The journey into wisdom has just begun.

Computers have traditionally been available to scientists at universities, to government and large corporations. The great scientific strides of the past two decades have been founded on the logical processing power of computers. Computers are now available for personal use at home and in business. PEARLSOFT is dedicated to bringing the power of computer processing to each unique personal computer user. PEARLSOFT believes that future great advances in science, government, education and business will be founded in personal computing.

The corporate mission of PEARLSOFT is to design and develop computer software that all people can use to more fully understand their world. Computers have a vast potential for helping people to accomplish their objectives. No two computer users need exactly the same thing So, software must be able to change to meet the differing needs of each unique user. Whether people use computers in their work or in their home life, a special kind of computer software is needed to bring the vast potential of computers into useful operation for each unique user. A special system of software is needed that allows people to create computer software to precisely fit their needs.

PEARLSOFT is dedicated to providing computer software that is functional, easy to use, and most importantly, operates according to the unique requirements of each computer user. Osborne Computer Corporation is dedicated to providing a quality portable computer that can be used in the office or the home. Therefore, we were very pleased when Osborne chose to offer PERSONAL PEARL on the Osborne portable computer. We hope you will be as pleased with the Osborne PERSONAL PEARL as we are.

Narm regards,

William R. Stow, III President, C.E.O.

### **ACKNOWLEDGEMENT**

PEARLSOFT would like to thank the following for their assistance, suggestions and guidance in writing the PERSONAL PEARL publications:

- 1. The Technical and Publications staff of Osborne Computer Corporation.
- 2. SoftStat Systems of Satem, Oregon.
- 3. Bill McLain of Portland, Oregon.
- 4. Numerous individuals who worked with us during the PERSONAL PEARL beta-test release period.

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### Chapter 1

### USING THIS BOOK

### INTRODUCTION

This book will introduce you to PERSONAL PEARL, a very special software package that will let you manage your information in a completely new way. This software can be used in its pre-programmed form (INFOSYSTEM) to do some of the jobs you need done now. Or you can modify the software --to any degree you desire -- in order to completely customize it to suit your individual requirements. Further, you can create your own custom software programs from scratch. In short, PERSONAL PEARL allows you to do productive work immediately, but it can also be changed and expanded as your requirements change and as you become more proficient at using the full power of the software. You and PERSONAL PEARL can grow together.

### PURPOSE and SCOPE

The purpose of this book is to show you how to use the PERSONAL PEARL software to manage your information. The book guides you easily into a basic understanding of the software. You will be guided through an easy, step-by-step tutoria, that takes you through the basic features of PERSONAL PEARL. When you are finished with this easy tutorial, you will have created your first PERSONAL PEARL program. You will be able to design your own forms and reports based on the understanding you have gained by having had "hands on" experience with PERSONAL PEARL. The flow of this book is as follows:

Chapter 2	Overview	Briefly describes how PERSONAL PEARL can be
		used to manage your information in the way best
		suited to your needs. Introduces you to the basic
		ANADATE OF DEDOCATAL DEADI

Chapter 3	Getting	Step-by-step instructions telling you how to instal
	Started	PERSONAL PEARL so that it runs on your computer.

Chapter 4	Getting	Outlines the organization of PERSONAL PEARL and
	Around in	heips you actually get started using the system. Uses
	PERSONAL	information from your INFOSYSTEM (set up in Chap-
	PEARL	ter 3) to help you see and understand the various
		parts of PERSONAL PEARL.

### 2 Easy Tutorial User's Guide

Chapter 5 Easy

Tutorial

Shows you how to create a simple, but useful and straightforward Address Book. Gives you hands-on

experience and step-by-step instructions using illus-

trations of screens and user responses.

Chapter 6 Glossary

Follows the Easy Tutorial and defines useful concepts

and words used throughout the Easy Tutorial for quick

reference.

### **OTHER REFERENCE MATERIAL**

Two more books are contained with the PERSONAL PEARL software package. These are:

Advanced Tutorial A book that is designed solely to show you how to use the advanced features of PERSONAL PEARL, It covers such topics as: calculations, sorting, file maintenance, sharing data between forms, printing address labels, etc. Upon completion of the sample CLIENT list and appointment CALENDAR system developed here, you will have a mode you can not only use as is, but which you can use to compare your future development efforts. A glossary is also included

with this book.

Reference Manual Designed to provide detailed information about the capabilities, features and operation of PERSONAL PEARL. Each chapter provides detail on specific actions involved with using PERSONAL PEARL, required and optional Appendices follow the Reference Manual and provide special items of information that may be used most frequently, and where ease of access is important,

### Chapter 2

### Overview

### INTRODUCTION

The purpose of PERSONAL PEARL is to let you, the user, manage any information desired, such as: mailing lists, appointment scheduling, client costing, etc. This software lets you organize and use the information in the way best suited for you. With PERSONAL PEARL, you can design custom screen displays that are used for: collection, filing, updating and analysis of your information.

Under your direction, PERSONAL PEARL performs four major "services" for you:

design forms Lets you design a form (similar to a paper form) that

specifies what information you want collected and what

form the information will be in.

design reports. Lets you design the layout of a report PERSONAL

PEARL then extracts the data you have specified earlier

and fills out the report according to your design.

enter data Lets you add, change, or delete information (data) from a

form -- and even lets you have one form feed data to

another form.

produce reports Lets you produce any one of the reports you have

designed -- and lets you choose how it is to appear, such

as on a screen on paper.

Each of the above "services" is described separately in subsequent paragraphs.

### **DESIGN FORMS**

In managing any 'information, the first step is to identify what type of information you want collected and in what form. This is done by using the DESIGN FORMS part of PERSONAL PEARL.

### Easy Tutorial User's Guide

There are five basic steps in designing any form:

form layout
 You design your own form on the screen, in the same

manner as doing it on paper. You specify each item to be on the form (such as ADDRESS or AGE) and how long each entry should be (such as two spaces to enter AGE).

identify data
 Lets you specify requirements for each entry on the form input areas
 by letting you answer the questions;

is input in this area always required?

Is the entry to be letters or numbers?

Is any calculation needed?

install form Places your newly-designed form into the computer

system so you can use it whenever you want.

find records
 Lets you set up unique names for any entry on a form so

that you will avoid duplication and so you can always find the correct entry in the system. For example, a record can be defined so it is unique. In this case, if you enter a the name of "JOHN Q. DOE", no other JOHN Q. DOE can be entered on any form. If you had two clients with this name, you would enter one of them as "J. Q. DOE",

for instance.

 share data
 Lets you extract information from one form and place it on another form (this is done automatically by PER-

on another form (this is done automatically by PEH-SONAL PEARL). For example, if you are using two forms (such as CLIENT LIST and APPOINTMENT CALENDAR), you could just enter the client's name on the calendar and let the system automatically extract his phone number from the list and move it to the appointment calendar.

ment calendar.

### **DESIGN REPORTS**

The next step is to define the way you wish your reports to print out information you have put into a form. You may wish your report to look exactly like your form, or you may want it to look quite different. You may also want to have several different types of reports for the same form.

As with forms, there are five steps in designing any report:

•	report layoul	You design the layout of your report on the screen. It may either look like the form (in which case you may copy the form layout), or it be created from scratch. If the report is laid out from scratch, you specify each item from the form that you want to appear on the printed report. You may define a report for use with the SuperCaic spreadsheet software program
•	identify data output areas	Lets you name each output area in the report using the sames names you specified in the entry form. In addition, if computations are to be performed, you define them at this time.
•	install report	Places your newly-designed report into the computer system so you can use it whenever you want.
•	sort priority	Allows you to specify the order in which data should be printed during report processing.
•	share data	As with forms, this option allows you to call in information from other forms when the report is printed.

### ENTER DATA

The enter data feature of PERSONAL PEARL allows you to enter, change (edit) and/or delete information on the forms you create. When you select this function, you name the form you wish to enter data, into and it is automatically displayed on your screen. You may then either ADD data, EDIT data, or DELETE data from the form you are working on.

### PRODUCE REPORTS

This feature lets you print out or otherwise produce your reports. Reports may be produced on a printed page, relayed back to the console, or stored as output onto a disk (for use with the SuperCalc spreadsheet software or with word-processing software, such as WordStar). You may also produce mailing labels using the produce reports feature. You may print reports within a specified high and/or low range.

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### SUMMARY

In summary, PERSONAL PEARL lets you do four basic jobs:

- Design forms
- Design reports
- Enter data
- Produce reports

Each of the above jobs is called a "service". Using these services is easy and straightforward:

Design forms
 Design reports
 These two services are usually done only once. They set up the "form" and its associated "report(s)" for the information that is to be entered and printed.

Enter data
 Produce reports
 Use these two services get work done, Allows you to put information into the "form" designed above and to then print the "report(s)" associated with the form.

### Chapter 3

### Getting Your Osborne Computer and PERSONAL PEARL Started

Before you move on to the tutorials, review the basic features listed below. Information on setting up your disks, HELP, commands, messages, and CP/M file maintenance will allow you to move ahead with useful information already in your possession.

### 1. SETTING UP.

Before you can begin, you need the following hardware and software tools:

- a. Hardware Requirements
  - 1) Osborne Computer (tm).
  - Printer that prints at least 80 characters per line (a printer is not required, but is certainly useful).

### b. Software Requirements

- 1) CP/M operating system, version 2.2 or later.
- 2) Copy of PERSONAL PEARL (seven disks in all).

The disks are your "Masters" and are labeled as follows:

- a) DESIGN FORMS Disk 1 of 7.
- b) DESIGN REPORTS Disk 2 of 7.
- c) INSTALL Disk 3 of 7.
- d) ENTER DATA Disk 4 of 7.
- e) PRODUCE REPORTS Disk 5 of 7.
- f) FILE MAINTENANCE Disk 6 of 7.
- g) SYSTEM STARTUP, SORT & HELP TEXT Disk 7 of 7.

### 2. GETTING STARTED.

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In order to begin using your PERSONAL PEARL, you will need to setup a set of working disks from your master disks as described above. To begin with, be sure that you have all seven of these disks.

In order to setup working disks, the following steps are required:

### Step 1. Label ten disks as follows:

- a. DESIGN FORMS
- b. DESIGN REPORTS
- c. INSTALL (forms and reports)
- d. ENTER DATA
- e. PRODUCE REPORTS
- f. FILE MAINTENANCE
- g. SYSTEM STARTUP
- h. SORT
- i. INFOSYSTEM
- PROGRAM and DATA

This disk will contain the programs you create using PERSONAL PEARL and also the information that is entered into the programs. You would need one of these any time you create a program using PERSONAL PEARL. This is a blank, formatted disk and is piaced in drive B.

### Step 2. Make Copies of Master Disks.

Copy each of the master distribution disks onto seven working disks. To copy a disk on your Osborne Computer, the following steps are required:

### NOTE

The use of COPY and the responses you receive from your computer may vary from those indicated below depending upon the version of the system you have received on your Osborne Computer, if your system does not respond as indicated and you have a question, refer to your OSBORNE documentation on copying diskettes.

USER: Place your CP/M system disk in drive A, and

Press the RESET button, then

Press RETURN

Once CP/M is up and the A> prompt appears:

USER: Enter: COPY, and

Press RETURN

Your computer will respond:

OSBORNE DISK UTILITY PROGRAM Revision 3.0

C Copy diskettes

F Format diskettes

RETURN exit program

Press C to Copy, F to Format or RETURN to exit -

USER: Enter: C

Your computer will respond:

Select source drive for COPY (A or B) or press RETURN for main menu \_

USER: Place the master distribution disk (1 through 7) in drive A, and

Place the working disk (1 through 7) in drive B, then

Enter: A

Repeat the procedure above for each of your seven master disks.

Once this step is completed, you should place your master distribution disks in a safe place and from this point on only use your working disks.

Step 3. Format 3 blank diskettes.

At some point, you should format the three diskettes labeled SORT, tNFOSYSTEM, and PROGRAM AND DATA.

You may do this by using the COPY utility program as described above in Step 2, and selecting the "F" option rather than the "C" option to format these diskettes.

Step 4. Place CP/M on Working Disks,

USER: Place a copy of the CP/M operating system on each of the ten disks described above.

(This will allow you to place any one of the ten disks you will be using in drive A at any time, press the RESET button, and begin processing.)

In order to place the CP/M operating system on a disk, the following procedure is required:

USER: Place your CP/M system disk in drive A, and

Press the RESET button, then

Press RETURN

Once CP/M has loaded and the A> prompt appears,

USER: Enter: SYSGEN and

Press RETURN

Your computer will respond:

SOURCE DRIVE (A OR B)

USER: Enter: A

Your computer will respond:

Put SOURCE diskette in drive A then press RETURN

USER: Press RETURN

Your computer will respond:

Put DESTINATION diskette in B, then press RETURN

USER: Place the working disk (1 through 7) in drive 8, then

Press RETURN

Repeat the procedure above for each of your ten working diskettes.

Step 5. Setting up the SORT Disk.

The PERSONAL PEARL sort program is provided on the seventh master distribution disk, in order to set up your working sort disk, use the following procedure:

USER: Place the CP/M system diskette in drive A.

Place your working SORT (disk number 8) in drive 8.

Press ctrl/C

Enter the command: PIP and

Press RETURN

Your computer will respond with an \*

USER: Replace the system disk in drive A with your SYSTEM

STARTUP disk (disk 7), then

Enter: B:=A:PSORT.\*[V], and

Press RETURN

Your computer will respond:

COPYING-PSORT.001 PSORT.002 PSORT.COM

USER: Remove both disks, and insert your CP/M system disk in

drive A

Step 6. Setting up Your INFOSYSTEM Disk.

The programs for your INFOSYSTEM are provided on the DESIGN REPORTS and FILE MAINTENANCE disk. In order to set up your working disk, do the following:

USER: Place the CP/M system disk in drive A.

Place your working INFOSYSTEM (disk 9) in drive B.

Press ctrl/C

Enter the command: PIP, and

### Press RETURN

Your computer will respond with an \*

USER: Replace the system disk in drive A with the DESIGN

REPORTS disk (disk 2), then

USER: Enter the command; B:=A:\*.DIR[V], and

Press RETURN

Your computer will respond:

COPYING-PEOPLE.DIR

USER: Enter the command: B:=A:\*.R00[V], and

Press RETURN

Your computer will respond:

COPYING-FARLEY.R00 INVOICE.R00 PHONE R00 SCHED.R00

USER: Remove the DESIGN REPORTS diskette in drive A, and

Insert the ENTER DATA diskette (disk 4) In the same drive, then

Enter the command: B:=A:\*.DIR[V], and

Press RETURN

Your computer will respond:

COPYING-CALENDR,DIR

USER: Enter the command: B:=A:\*.S00[V], and

Press RETURN

Your computer will respond:

COPYING-CALENDR S00 PEOPLE S00

USER: Remove the ENTER DATA disk from drive A, and

Insert the SYSTEM STARTUP (disk 7) in its place, then

Enter the command: B:=A:PEARL.DIR[V], and

Press RETURN

Your computer will respond with an \*.

USER: Press RETURN

to exit from the PIP program back to CP/M. You may leave the disks in both drives as they are needed to continue with System Startup

### 3. SYSTEM STARTUP.

In order to personalize your working system, the following steps are required:

USER: Place the SYSTEM STARTUP disk in drive A, and

Enter the command: PEARLUP and

**Press RETURN** 

You will be asked to enter your name. Once you have done this, the PEARLUP program will ask you to insert the DESIGN FORMS, DESIGN REPORTS, ENTER DATA, PRODUCE REPORTS, and FILE MAINTENANCE diskettes in drive A so that each PEARL system diskette may be PERSONALIZED for you.

Once this step is completed, you are ready to run your system.

### 4. RUNNING PERSONAL PEARL.

To begin running one of the programs services (contained on disks 1, 2, 4, 5 and 6 above), place the PROGRAM disk in drive A and a blank, formatted PROGRAM AND DATA disk (or your INFOSYSTEM Disk) in drive B of your Osborne and press RETURN. Then enter one of four program name choices:

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For example: PEARLDF (design forms - disk 1)

PEARLDR (design reports - disk 2)
PEARLED (enter data - disk 4)
PEARLPR (produce reports - disk 5)
PEARLFM (file maintenance - disk 6)

Now press RETURN. The appropriate service menu will be displayed.

The INSTALL disk 2 is used with DESIGN FORMS and DESIGN REPORTS disks. You will be prompted to place the INSTALL disk in drive A when it is needed.

Likewise, inserting the SORT disk 8 will be requested when it is needed to produce a report that requires a sort

Neither the SORT nor the INSTALL programs will run without being called for by one of the other programs.

For additional discussion on entering data into the system, please see Chapter 4.

### 5. YOUR INFOSYSTEM DISK.

You have been provided two programs (PEOPLE and CALENDR) and four reports (FARLEY, PHONE, SCHED, and INVOICE) on your INFOSYSTEM diskette. The PEOPLE program allows you to file information about business contacts or people you know. The CALENDR program allows you keep a schedule of appointments and, if you wish, to record time spent on each appointement. The FARLEY, PHONE, SCHED, and INVOICE reports provide listings in various formats of the data saved into these two files. (Incidentally, the FARLEY report is named after an individual in a novel who helped his employer remember important tidbits of personal information about business contacts.)

If these programs and reports do not meet your exact needs you may customize them using the DESIGN FORMS and DESIGN REPORTS facilities of PERSONAL PEARL. We suggest, however, that you first INSTALL the forms and reports as provided on the distribution disk. Refer to Chapter 5, Section 5, for an example of how to INSTALL an existing form.

### 6. HARD DISK.

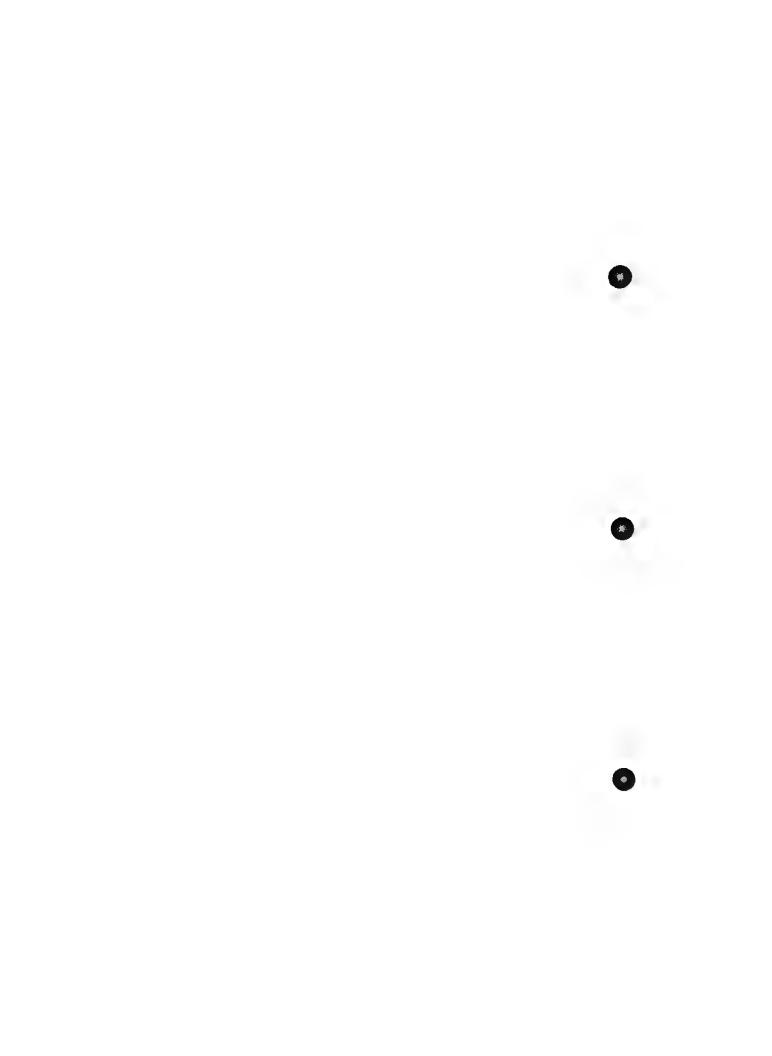
To change the drive specifications so that PERSONAL PEARL will run on a hard disk connected to your Osborne computer, the following steps are required:

- a. Place all of the PROGRAM files on a single drive. This includes all of the files on disks 1 through 9 above.
- Edit the DISKS= specification in the INSTALL.DAT file (see Appendix C) to use the hard disk drives.

The DISKS-dddddd specification in the INSTALL DAT file indicates the disk drives where program files, data files, help text, etc., will be placed. Each "d" in the list indicates one category of file. Your distribution diskettes come configured to use drives A and B. You will probably want to change the drive assignments based on the number of drives, and drive names on your hard disk configuration.

Note that the sixth disk in this list is the SYSTEM disk on which the PEARL PROGRAMS reside and must be the same as the logged-in drive during system execution.

- c. Run the PEARLUP programs as described above. This will implement the changes made to the INSTALL.DAT file. When the INSTALL.DAT changes are used by running INSTALL COM, the following files must be on the currently logged drive: INSTALL.DAT, PEARL.A00, and PEARLXX COM files. (See Appendix D).
- d. You are now ready to run PERSONAL PEARL. When you begin execution, be sure that you are always logged in to the drive containing the PROGRAM files.



### Chapter 4

### Getting Around In PERSONAL PEARL

The goal of this section is to acquaint you with the organizational layout of the various menus and screen displays of PERSONAL PEARL. Chapter 5 will provide further step-by-step examples of how to use these different parts of PERSONAL PEARL.

### 1. STARTING UP PERSONAL PEARL.

There are actually four ways to get into PERSONAL PEARL. You can execute any one of four PERSONAL PEARL main program names (see Chapter 3, section 4). However, for right now, we will deal with the DESIGN FORMS program. The tutorial will show you your other choices for starting PERSONAL PEARL.

From now on, until you choose to exit PERSONAL PEARL, you will be "inside" the PERSONAL PEARL system. If a change of disks is required, PERSONAL PEARL will inform you of what to do. If you haven't already done so, now is the time to:

- a. Turn on your Osborne computer,
- Insert the PERSONAL PEARL Design Forms disk in drive A: and your INFOSYSTEM disk in drive B:,
- c. Press your bootup or reset button.
- d. Type PEARLDF right after the A> and press RETURN.

You should now be looking at a screen that reads "DESIGN FORMS" in big composite letters, if not, go back and try the above steps one more time. If you can't get to this point and you know that you've put the correct disks in the correct drives on the machine, contact your dealer for help in identifying the problem.

From now on, we are relying on you to take your time and read the screens. Many people who are inexperienced with computers may need practice reading from the display screen. Just take your time. Familiarity with the

screens, etc. is what we are after here. The relevant parts of the screens will be pointed out in this section.

Perhaps you should know that we can think of no way that you can do any harm to this software by "playing" around. With your master copies securely filed away (backed up - see Chapter 3), you are safe. Now is the time to move around the system without worrying about what might happen. Soon, you will know what is happening and understand how PERSONAL PEARL operates.

So, back to the screen. The critical line on this first screen is at the bottom. It says:

Press RETURN to continue, ? for HELP, or ESC to EXIT

This line tells you the following:

- The ESC key is the most often used way to "back out" of any given part of PERSONAL PEARL.
- b. At almost every point, you can get extra HELP by entering the "?" or "Q" which will provide you with HELP information or a HELP code number.

### NOTE

If the HELPTEXT file (PRLHELP.TXT) is not available, a HELP code number will be displayed Refer to Appendix G, in your Reference Manual for the explanation associated with each HELP code.

c. To get farther "into" PERSONAL PEARL, use one of the offered options or supply information as requested.

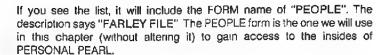
At this point enter a ? and watch the results. You will see the first help menu. At the lower right of the screen you will see "Press RETURN?". When you do this, you will proceed as if you had entered the first RETURN requested above.

### 2. FORM DIRECTORY - SELECTION SCREEN.

You should now be looking at a screen that says:

### FORM DESCRIPTION

on the top line. Below this is a list of the FORM names on the INFO-SYSTEM disk in drive B:. If no names appear, check your disk. To do this, press ESC until you see the A> prompt of CP/M and then enter DIR B:. The files listed should agree with the listing for the INFOSYSTEM disk.



### NOTE

Since we don't want to change this form or its accompanying report, we will use the ctrl/O command to exit the design screens we visit. We'll explain further as we proceed with the example.

Right below the line you will see the prompt.

# GIVE PEARL YOUR NEW OR PREDEFINED FORM NAME:....

and below that line.

Press RETURN to continue, ? for HELP, or ESC to EXIT

As you can see, things are starting to appear familiar. Now, enter either a RETURN or ?. Leave the ESC alone for awhile since we aren't ready to leave just yet.

The ? got you a HELP explanation and the RETURN caused ENTER NAME to appear on the bottom line of the screen. At this point, it's time to explain a couple of things that will be of general usefulness.

A FORM is the basis for all the work you do in PERSONAL PEARL. Once you name or select a FORM, you have identified a set of information that you want to work with PERSONAL PEARL associates a single FORM with a PROGRAM UNIT. Later, when you are tutored on designing reports, you will see that a REPORT is always associated with one or more FORMs (thus, a program unit is created through a combination of form(s) and reports.) In order to design or use a report, you must have previously specified a FORM name and completed some other steps.

Now, enter PEOPLE and press RETURN. Notice that PERSONAL PEARL manages the cursor placement when you are responding to menu prompts. You don't have to worry about your position on the screen.

## 3. DESIGN FORMS MENU

In order to view the data input form for PEOPLE, our next step is to select Step 1 on the DESIGN FORMS MENU. You will note there are five steps or operations for designing a form.

Notice that the line at about the bottom third of the screen now says:	
DESIGN FORMS MENU	
This spot on the screen will almost always let you know where you are in the PERSONAL PEARL organization. Right below it, we can see the selected FORM NAME of PEOPLE and the following request:	
ENTER A ATTENDANCE	

ENTER A STEP NUMBER: \_

and then:

Press RETURN to continue, ? for HELP, or ESC to EXIT

Press RETURN, PERSONAL PEARL will display "SELECTION OUT OF RANGE" on the bottom line of the screen. This message merely points out that you have a list of alternatives and the one you used is not valid.

Now enter a 1 instead, for the first step, FORM LAYOUT. At this point, you will see the form for PEOPLE provided for you.

# 4. FORM LAYOUT SCREEN

PERSONA	I INFORMATION FORM	== page 1 ======
	Bir	
Notes:		
FORM LA	YOUT - CONTROL KEY	COMMANDS —
F - Word forward	V - Insert char	
A - Word back	G = Delete char	Z - Scroll up
-	T - Delete word	W - Scroll down
R - Page back		0 - Ignore & exit
G - HELP	U - Line to top	ESC - Save & exit
PAGE: 1 LINE: 1	COL: 1 AREA NAME	<b>:</b>

As you read the screen, you will see that it is divided by a line containing the name of your current location in PERSONAL PEARL (Form Layout). Below this line are the commands you will use later on. For now, notice only the bottom two commands in the right-hand column. The bottom one is the familiar ESC, which at this point saves and exits (stores the work you have done). The ctrl/O command is above the ESC. Ctrl/O moves back up the PERSONAL PEARL system to the previous menu. Furthermore, it does not save any new work that has been done since arriving at this screen. This is an important difference worth noting right now. For these exercises, you should always use ctrl/O. This will make sure you don't after the screen accidentally. If a screen did get altered, you could restore it (recopy it from the master copy).

Now, after you have studied the screen as much as you want to, use the ctr./O to move back up one level of menu. Press the control key down and then press O.

We are back at the DESIGN FORMS MENU. Now enter 2 for DATA INPUT AREAS. Remember, we are stid dealing with the "PEOPLE" form. This screen display of the form is like the one for FORM LAYOUT. However, note that certain areas on the form are shown in high intensity print and the ctrl/B command "DEFINE DATA INPUT AREAS" is new. You'll learn now to use this command in the tutorial. Notice that the bottom right-hand commands in the list are the same as last time. The ESC and ctrl/O provide the ways "up and out" of this DATA INPUT AREAS screen.

## 5. INSTALLING FORMS AND CHANGING DISKS

At this point, you will learn two things: how to INSTALL your INFOSYSTEM and how to change disks.

Press the ctrl/O to return to the DESIGN FORMS MENU. Skip options 3 and 4 on this menu and go directly to step 5.

Now enter a 5 and press RETURN. The following message will appear on your screen:

Place INSTALL program disk on drive A. Then press RETURN, OR, press ESCAPE, to terminate request.

At this time, remove the DESIGN FORMS disk from drive A, and insert the INSTALL disk (disk 3). Then press RETURN.

The message, INSTALLING FORM should appear in the message area at the bottom of your screen. Once your computer has finished processing the PEOPLE form, the following message will appear on your screen:

Place DESIGN FORMS program disk on drive A. Then press RETURN, OR, press ESCAPE, to terminate request.

At this time remove the INSTALL disk from drive A, and insert the DESIGN FORMS disk back in the drive. Then press RETURN.

#### 6. SERVICE DIRECTORY SCREEN

When you leave one of the four programs of PERSONAL PEARL, a SERVICE DIRECTORY is displayed. You can either move on to a selected service or return to CP/M. Here you see the four main options of PERSONAL PEARL, Both PEARLDF and PEARLDR would lead to a four-option directory. Through PEARLED, ENTER DATA and PEARLPR, PRODUCE REPORTS, the operational (final useable) parts of PERSONAL PEARL, you will only see the ENTER DATA and PRODUCE REPORTS options, listed here as 3; and 4:.

At this point, you could go directly to the ENTER DATA program and begin to add data to your DATA file, or you could continue to install the other FORM and the REPORTS (using the DESIGN REPORTS option) provided on your INFOSYSTEM disk. The following is a discussion of what will occur when you choose option 3 on the SERVICE MENU to ENTER DATA.

### 7. ENTERING DATA

Select 3: ENTER DATA, PERSONAL PEARL is a big enough system to require more than a disk's worth of programs. Selecting the ENTER DATA option at this time is just to gain moree experience with disk changing and to review the ENTER DATA menu.

You should see the following:

Place ENTER DATA program disk on drive A. Then press RETURN, OR press ESCAPE, to terminate request.

If you change to the correct disk (disk number 4) and press RETURN, you will be able to continue. If you put the wrong disk in drive A, one that doesn't contain PEARLED, the same prompt will be there. If you enter an ESC, you will exit to CP/M.

Go through with the disk change to assure yourself that you know how it works. This part of PERSONAL PEARL will take you straight to a screen containing the image of our example. The screen is blank and waiting for you to enter data. Please don't enter any data at this time. Just use the ESC key to leave. Since you are now in the area of operation for entering your "rea," information, you must confirm that you want to leave.

Notice that a message appears at the bottom right of the screen saying "EXIT?", If you enter a "Y" or "y", the exit will occur. Entering anything else will cancel the exit request.

After that, return to the DESIGN FORM disk. To do this, you will have to get to the SERVICE DIRECTORY by completing the exit from the ENTER DATA screen and pressing ESC once more. Select 1: DESIGN FORMS and press RETURN. The prompt for a disk change will appear and you once again change disks.

### 8. REPORT SELECTION SCREEN

At this point, you might try returning to the SERVICE DIRECTORY from the DESIGN FORMS MENU (press ESC) and select 2. DESIGN REPORTS. A screen very similar to the one for selecting a form will appear. This time all the REPORTs for the current FORM selection will be displayed. You should see a listing for "LABELS". Enter LABELS and press return.

#### 9. DESIGN REPORTS SCREEN

Now you have the menu with the options for designing a report in front of you. It strongly resembles the equivalent screen for designing forms. Select 1: REPORT LAYOUT and see the mailing label report which has been designed for the PEOPLE form.

If you wish, you can now return to the DESIGN REPORTS MENU (use ctri/O) and select other options to examine, If you want to leave PERSONAL PEARL, just use the ESC key until the CP/M A> prompt appears.

Now you've seen how to move around inside PERSONAL PEARL. When you're sufficiently comfortable with the process, move on to the Easy Tutorial, where you'll begin to see and use the capabilities of PERSONAL PEARL.

# Chapter 5

# Easy Tutorial - Address Book

### INTRODUCTION

To introduce you to the features of PERSONAL PEARL, let's create a simple program that you can immediately use -- an address book.

To create this program, we will do four things: DESIGN FORMS, DESIGN REPORTS, ENTER DATA and PRODUCE REPORTS. We will use only the simplest functions of PERSONAL PEARL in order to familiarize you with the basic concepts. The Advanced Tutorial User's Guide will go into the details about the more powerful aspects of the system.

The address book, in its physical form, looks like this:

Company Name: .		
Address:	<u> </u>	
	State: Zip:	
Phone No.:		

Our application program is going to look just like this book. The only difference is that we will be able to call the addresses up on a video display screen and/or print them out on a printer from a computer "file" rather than find them by leafing through an address book. Each separate address on the file we are creating is called a "record".

Remember, you are using several disks. Thus, It may be necessary for you to "swap" (exchange) in and out of drive A whenever you need to "access" a particular program. For example, if you are done designing forms and wish to enter data, you will need to swap disks once the ENTER DATA option is selected. Don't worry. You will hear a "beep" when a disk swap is required, and a message will appear te ling you which disk to put in drive A.

#### **COMMANDS**

When you select one of the options of PERSONAL PEARL, a COMMAND CONTROL KEYS menu will be displayed at the bottom of your video display screen. These control commands allow you to add, edit, insert, or delete text. Other important data entry/editing capabilities, such as saving a file or stopping a computer operation are provided as well. (See Appendix F of the Reference Manual for more detail on Control Key Commands.)

Each command is invoked by pressing the appropriate keyboard character while holding down the CONTROL (ctrl) key. The control function is illustrated in this manual as follows:

#### ctrl/character, e.g. ctrl/N

The keyboard character represents the desired function and is pressed while the ctrl key is also pressed. For example, if you wanted to delete a character, you would depress ctrl and the character G together, e.g., ctrl/G (or lowercase g). Or, if you wanted to insert a line, you could depress ctrl/N and a blank line would appear so you could add a line. A short description of each command is also provided for those not already familiar with them.

There are two important points to remember when using commands:

- Press CTRL and the letter at the same time.
- You can use either an upper or lowercase letter. For example: ctrl/n and ctrl/N do the same thing.

Additionally, you may enter the CP/M command ctrl/P in order to get a printout of your screens during creation of your program. This capability is particularly helpful for proofing purposes (see Chapter 4 of Reference Manual - Design Ards)

The up, down, left and right arrows on your terminal keyboard may be used for cursor positioning as well as those keys provided in the COMMAND CONTROL KEY menus. A sample of the COMMAND CONTROL KEY menu displayed during the DESIGN FORM LAYOUT is shown below:

```
FORM LAYOUT - CONTROL KEY COMMANDS

F - Word forward V - Insert char N - Insert line
A - Word back G - Delete char Z - Scroll up
C - Page forward T - Delete word W - Scroll down
R - Page back Y - Delete line O - Ignore & exit
Q - HELP U - Line to top ESC - Save & exit

PAGE: LINE: COL: AREA NAME:
```

## HELP EXPLANATIONS



PERSONAL PEARL provides extensive on-screen "he'p" explanations. The HELP capability gives you immediate access to information about the functions of PERSONAL PEARL and how to implement them to build your own programs and reports.

HELP may be obtained during a session with PERSONAL PEARL by simply depressing? or Q. An explanation is then provided pertaining directly to the particular function you are working on.

You may leave "HELP" at any time by depressing the ESCAPE key on your terminal.

The printed HELP explanations file is also provided in Appendix G of the Reference Manual. In some cases, it may be desirable to not have the HELP explanations "on-line" because these explanations do take up a significant amount of work space on your disk. Therefore, HELP is also provided in printed form.

#### MESSAGES



Messages are displayed in the lower right-hand corner of your video display screen. Messages are of brighter intensity than the regular text so they are easy to see. A message may ask you a question or it may simply provide information, such as your current status. For instance, one message requiring a response from you is. NOT LOCATED-ADD (Y/N)?. In this case, PERSONAL PEARL is saying it could not find a name for you and wants to know if you wish to add it. You would respond by entering either a "Y" or "N". On the other hand, a message might say PRINTER, or ADD, or EDIT. These messages are informational and simply tell you your current status (i.e., printer operating, adding records, or editing records)

Special messages pertaining to conditions in your system give you instructions for running your program. These may originate in from different areas, such as:

- PEARL software,
- CP/M operating system,
- Other software being run with PERSONAL PEARL (i.e., SuperCalc or WordStar), or
- During program installation process.



These special messages are described in Appendices A and B of the Reference Manual and provide you with detailed information concerning solutions to the situations described by the special messages.

# SECTION 1. DESIGN FORMS

You are ready to begin once your Osborne computer and printer (if used) are plugged in and turned on.

USER: Turn on your computer.

Place your DESIGN FORMS Disk 1 in drive A.

Place your PROGRAM AND DATA Disk in drive 8.

Depress RETURN

#### NOTE

If the computer does not respond after you turn it on, it may be because the CP/M operating system is not on the PERSONAL PEARL disk you have inserted in drive A. Make sure CP/M is on your disk, then try again. See Appendix H for discussion.

You should see the following "prompt" on your video display screen: A>. Immediately following this prompt, type PEARLDF and depress return.

A> PEARLDF
Depress RETURN

### NOTE

The placement of the "cursor" tells you where you are. The cursor is normally in brighter intensity than the other text on the screen and may be located after a prompt or at the beginning of an input line. As you enter information, notice the bottom of your video display screen. At times, prompts (or messages) will appear which may require a response from you. (This tutor at tells you how to respond.)

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	000	00 00	00	000	00	00		00	00	0000	
	0	0	0	0	0	0 (	0 0	0	٥		
	000	0 0	0	000	100	0	00	0	00	200	
	0	0	0	0	0	0		0		0	
	0	00	00	0	0	0		٥	000	200	

This is the first screen displayed after signing onto DESIGN FORMS. The "AAA" in the above screen represents the first three characters in the serial number assigned to your copy of PERSONAL PEARL (i.e., RSI) and the "nnnn" is the actual number of your copy of PERSONAL PEARL, VERSION represents the version number of PERSONAL PEARL you have.

USER: Depress RETURN

Once you have pressed RETURN, the Form Directory is displayed as follows:

FORM	DESCRIPTION		•
GIVE	PEARL A NEW OR PREDEFINED FORM NAME:	_	
Press	RETURN to continue, ? for HELP, or ESC to EXIT		
he For ame of	m Name may be from one to seven charac your form.	ters long. This will be the	
JSER:	After GIVE PEARL A NEW OR PREDEFINE	D FORM NAME:,	*
	Type ADDRESS, then		
	Press RETURN		
FORM	DESCRIPTION		
GIVE	PEARL A NEW OR PREDEFINED FORM NAME: ADDRESS	· 1	
Pres	s RETURN to continue, ? for HELP, or ESC to EXIT NOT LOCATED-ADD (Y/N	¥)	U

USER: Type Y to ADD to Form Directory

The phrase "NOT LOCATED-ADD" means that the form name you have entered is not on your Form Directory. You may ADD it by typing "Y".

FORM

DESCRIPTION

ADDRESS

FORM DIRECTORY

GIVE PEARL A NEW OR PREDEFINED FORM NAME: ADDRESS

DESCRIBE ADDRESS \_\_\_\_\_

Press RETURN to continue, ? for HELP, or ESC to EXIT ENTER DESCRIPTION

USER: After DESCRIBE ADDRESS, \_\_\_\_\_

Type MY ADDRESS BOOK, then

Press RETURN

A description is provided as an aid to you later on when you select a Form Name from the directory.

FORM DESCRIPTION

ADDRESS MY ADDRESS BOOK

GIVE PEARL A NEW OR PREDEFINED FORM NAME: ADDRESS

Press RETURN to continue, ? for HELP, or ESC to EXIT ADDRESS-ADDED

USER: Press RETURN

The ADDRESS-ADDED message tells you that the name you have entered has been ADDED to your Form Directory.

FORM DESCRIPTION

ADDRESS MY ADDRESS BOOK

FORM DIRECTORY

GIVE PEARL A NEW OR PREDEFINED FORM NAME: ADDRESS

Press RETURN to continue, ? for HELP, or ESC to EXIT
ADDRESS-SELECTED

You are now taken into the Design Forms menu:

	7
	Step 1: FORM LAYOUT
	Step 2: DATA INPUT AREAS
	Optional Step 3: INDEX FOR FINDING RECORDS
	Optional Step 4: DATA FROM OTHER FORMS
	Step 5: FORM INSTALLATION
	Form Name: ADDRESS
	ENTER A STEP NUMBER: _
	Press RETURN to continue, ? for HELP, or ESC to EXIT
	USER: Select 1 and
	Press RETURN
	DESIGN YOUR FORM IN THIS AREA
	FORM LAYOUT
)	, Press RETURN to clear screen or ? for HELP

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## USER: Press RETURN

This screen tells you that if you press RETURN you will get a blank screen and be able to begin typing in the layout of your form.

```
FORM LAYOUT - CONTROL KEY COMMANOS

F - Word forward V ~ Insert char N - Insert line
A - Word back G - Erase char Z - Scroll up
C - Page forward T - Erase word W - Scroll down
R - Page back Y - Erase line O - Ignore & exit
Q - HELP U - Line to top ESC - Save & exit

PAGE: LINE: COL: AREA NAME:
```

Note that all the ctri/commands you need to move around the working screen are listed in the FORM LAYOUT - CONTROL KEY COMMANDS. The full definitions are listed in Appendix F of the Reference Manual, but they work pretty much as you might expect from their short descriptions.

Company Nam	e:		
Address:			
City:		State: _	_ Zip:
Phone No.:			
F - Word fo A - Word ba C - Page fo R - Page ba	rward V ~ Ir ck G - Ei rward T - Ei ck Y - Ei	nsert char rase char rase word rase line	COMMANDS
F - Word fo A - Word ba C - Page fo R - Page ba	rward V ~ Ir ck G - Ei rward T - Ei ck Y - Ei	nsert char rase char rase word rase line	N - Insert line Z - Scroll up

USER: Type in the above layout.

If you want the HELP explanation for this screen, place the cursor in the left-most column of any line and press  ${\bf Q}$ .

Once you have completed laying out the address form:

USER: Press ESCAPE

		** '
Company Name	2:	
Address:		
City:	Sta	te:Zip:
Phone No.: .	<u>-</u> .	
FOR	4 LAYOUT - CONTRO	L KEY COMMANDS
		L KEY COMMANDS
F - Word for	rward V - Insert	
F - Word for A - Word bar	rward V - Insert ck G - Erase c	char N - Insert Line
F - Word for A - Word bar C - Page for	rward V - Insert ck G - Erase c rward T - Erase w	char N - Insert line har Z - Scroll up
F - Word for A - Word bac C - Page for R - Page bac	rward V - Insert ck G - Erase c rward T - Erase w ck Y - Erase L	char N - Insert Line har Z - Scroll up ord W - Scroll down
F = Word for A = Word bac C = Page for R = Page bac	rward V - Insert ck G - Erase c rward T - Erase w ck Y - Erase L U - Line to	char N - Insert Line har Z - Scroll up ord W - Scroll down ine O - Ignore & exit

The message "SAVING FORM" tells you that the form layout you have just entered is now being saved on the disk you have in drive B for future use. You are now returned to the Design Forms Menu for the next step. If you do not want to SAVE your form, you would press ctrl/O.

	Step 1:	FORM LAYOUT
	Step 2:	DATA INPUT AREAS
Optional	Step 3:	INDEX FOR FINDING RECORDS
<b>Optional</b>	Step 4:	DATA FROM OTHER FORMS
	Step 5:	FORM INSTALLATION
	************	CMO MCM
Form Name:		RINS MENU
ENTER A STE	P NUMBER:	-
Press RETUR	N to cont	inue, ? for HELP, or ESC to EXIT

USER: Select 2, and Press RETURN

Company Name:	
Address:	
City:	State: Zip:
Phone No.:	
DATA INPUT AREA	AS - CONTROL KEY COMMANDS
F - Word forward	B - Define data input area
A - Word back	Z - Scroll up
C - Page forward	W - Scrott down
R - Page back	0 - Ignore & exit
Q - HELP	ESC - Save & exit
PAGE: LINE: COL	.: AREA NAME:

USER: Position cursor on first underscore after Company Name: \_

Press ctrl/B (for define data input area)

Company Name:	
Address:	
City: Sta	te: Zip:
Phone No.:	
NAME THE DATA INPUT AREA HERE	
IS INPUT REQUIRED? (Y/N) _ T	
C≃Letters/Numbers, D=Date, N=	
FORMULA FOR COMPUTATION OF IN	PUT (OPTIONAL):

This screen allows you to "define" your data input areas. Note the input area to be defined is in brighter intensity.

Cursor is positioned after NAME THE INPUT AREA HERE:

USER: Type NAME and

Press RETURN

Cursor is positioned after IS INPUT REQUIRED? (Y/N)

USER: Type Y

Cursor is positioned after TYPE OF INPUT?

## NOTE

You will notice that some areas requiring a response already have a "response" in them, such as "C" for INPUT TYPE. You may simply press RETURN if the response you desire is already contained in the response area.

USER: Press RETURN

Cursor is positioned after FORMULA FOR COMPUTATION OF INPUT (OPTIONAL): We will not use computations in this tutorial. (The Advanced Tutorial Guide covers these options.)

USER: Depress RETURN twice, or press ESCAPE

Address:	State: Zip:
• • • • • • • • • • • • • • • • • • • •	EAS - CONTROL KEY COMMANDS
	B — Define data input area Z — Scroll up
C - Page forward	W - Scrott down
R - Page back	O - Ignore & exit
	ESC - Save & exit
PAGE: LINE:	COL: AREA NAME: NAME

Define the rest of the data input areas as follows:

## 1. Address:

ADDR (name) (required) (type - character) (no formula) Press RETURN twice

## City:

CITY (name) (required) (type - character) Press RETURN twice (no formula)

# State:

(name) (required) STATE (type - character) (no formula) Press RETURN twice

## 4. Zip:

ZIP (name) (required) Υ (type - number) (no formula) Ν Press RETURN twice

## 5. Phone No.:

**PHONE** (name) (not required) (type - character) (no formula) N Press RETURN twice

All input areas have been defined. You may now go to the next step.

USER: Press ESCAPE

Address:		
City:		State: Zip:
Phone No.	.:	
	DATA INPU	JT AREAS - CONTROL KEY COMMANDS
	forward	B - Define data input area
F - Word	forward	
F – Word A – Word	forward	B — Define data input area Z — Scroll up
F – Word A – Word C – Page	forward back forward	B — Define data input area Z — Scroll up
F - Word A - Word C - Page R - Page	forward back forward back	B - Define data input area Z - Scroll up W - Scroll down
F – Word A – Word	forward back forward back	B - Define data input area Z - Scroll up W - Scroll down O - Ignore & exit

Depressing ESCAPE saves the input areas you have defined and returns you to the Design Forms Menu for further steps.

Step 1: FORM LAYOUT

Step 2: DATA INPUT AREAS

Optional Step 3: INDEX FOR FINDING RECORDS

Optional Step 4: DATA FROM OTHER FORMS

Step 5: FORM INSTALLATION

DESIGN FORMS MENU

Form Name: ADDRESS

ENTER A STEP NUMBER: \_\_

Press RETURN to continue, ? for HELP, or ESC to EXIT

Optional Steps 3 and 4 are not covered in this tutorial as they are "advanced" features and not required in order to use a PERSONAL PEARL created system. However, these options are covered in the Advanced Tutorial Guide. We are now ready to INSTALL the ADDRESS form so that is may be used for entry of data.

USER: Select 5, and

Press RETURN

### NOTE

You may be prompted to place the INSTALL disk in drive A at this time. If so, do this and then press RETURN. The words "INSTALLING FORM" will be displayed during this process as shown below:

# INSTALLING FORM

After installation of your form is completed, you will automatically be returned to the Design Forms Menu. In order to go to the next option, you should press ESCAPE. The Service Directory will then be displayed so that you can move from Design Forms to Design Reports.

DESIGN OPERATE

1: DESIGN FORMS 3: ENTER DATA

2: DESIGN REPORTS 4: PRODUCT REPORTS

SERVICE DIRECTORY

FORM Name: ADDRESS

ENTER A SERVICE NUMBER: \_

Press RETURN to continue, ? for HELP, or ESC to EXIT

You may select another option at this time, or leave PERSONAL PEARL by depressing ESCAPE. You will see the A> on your display screen when you leave PERSONAL PEARL.

USER: Press ESCAPE or

Select Service 2 (Design Reports)

This completes designing a form layout for ADDRESS. The next part of this tutorial deals with designing a report for ADDRESS.

## SECTION 2. DESIGN REPORTS

Once you have designed your INPUT form, you may now design your reports. If you have returned to CP/M, you will have the "A prompt" displayed (A>) and must enter the following:

After A>, enter PEARLDR and press RETURN.

If you have not returned to CP/M, but are still in the SERVICE DIRECTORY, select 2 to design reports and go to Page 46.

Place the DESIGN REPORTS disk in drive A.

The Design Reports screens is displayed after entering PEARLDR:

### PERSONAL PEARL Copyright by PEARLSOFT, 1982 All rights reserved

Œ	1000	0000	0	0000	O	000000	- (	00000	00	0
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œ	0000	0000	0	0000	0	00000	(	0000	0	00
000	200	00000	00	000	o	000	000	200	00000	00000
0	0	0	0	0	0	0	0	0	0	0
000	XXX	000	00	000	0	0	000	000	0	0000
0	0	0	0		0	0	0	0	0	0
0	٥	00000	٥		0	000	0	0	0	00000

LICENSED TO:

YOUR SERIAL NUMBER IS: AAA-mmm\_\_\_\_, ver 1.xx

Press RETURN to continue, ? for HELP or ESC to EXIT

## NOTE

In depth discussion on the Design Reports process will be found in the Reference Manual. Again, the more advanced features of PERSONAL PEARL are covered in the Advanced Tutorial.

USER: Depress RETURN

After depressing RETURN, the Form Directory will be displayed.

FORM DESCRIPTION

ADDRESS MY ADDRESS BOOK

FORM DIRECTORY

GIVE PEARL A NEW OR PREDEFINED FORM NAME:

Press RETURN to continue, ? for HELP or ESC to EXIT

NOTE

ADDRESS is the only form on your Form Directory.

USER: Enter ADDRESS and Press RETURN

FORM	DESCRIPTION	
ADDRESS	MY ADDRESS BOOK	
	FORM DIRECTORY  NEW OR PREDEFINED FORM NAME: ADDRESS	
	,	
Press RETURN	to continue, ? for HELP or ESC to EXIT  ADDRESS-SELECTED	
nce ADDRES	S is selected, the Report Directory is displayed.	
REPORT	DESCRIPTION	
	REPORT DIRECTORY	
GIVE PEARL A	NEW OR PREDEFINED REPORT NAME:	

Press RETURN to continue, ? for HELP or ESC to EXIT

This is the Report Directory for the form ADDRESS you have just selected. It will only show reports defined for this form. Each form has its own Report Directory. You may have several reports associated with a single form.

USER: Enter ADRLIST and

Press RETURN

REPORT DESCRIPTION

GIVE PEARL A NEW OR PREDEFINED REPORT NAME: AD ALIST

Press RETURN to continue, ? for HELP or ESC to EXIT NOT LOCATED-ADD? (Y/N) ...

USER: Enter Y

Since ADRLIST is NOT LOCATED, it must be ADDED to the Report Directory by typing "Y". Once it has been added, the NEW REPORT OPTIONS will be displayed.

Option 1: USE YOUR INPUT FORM
Option 2: USE A PREVIOUS REPORT
Option 3: DESIGN FROM SCRATCH

NEW REPORT OPTIONS

ENTER AN OPTION NUMBER: \_\_

Press RETURN to continue, ? for HELP or ESC to EXIT

For this example, we will design our report example from scratch

USER: Enter 3 and

Press RETURN

Option 1: USE YOUR INPUT FORM

Option 2: USE A PREVIOUS REPORT

Option 3: DESIGN FROM SCRATCH

NEW REPORT OPTIONS

Press RETURN to continue, ? for HELP or ESC to EXIT

We are asked to DESCRIBE ADRLIST and then to select the KIND OF REPORT.

USER. Enter MY ADDRESS LIST and

Press RETURN

USER Enter L and

Press RETURN

REPORT DESCRIPTION

ADRLIST MY ADDRESS LIST

REPORT DIRECTORY

GIVE PEARL A NEW OR PREDEFINED REPORT NAME: ADRLIST

Press RETURN to continue, ? for MELP or ESC to EXIT ADRLIST-ADDED

USER: Press RETURN

REPORT DESCRIPTION

ADRLIST MY ADDRESS LIST

REPORT DIRECTORY

GIVE PEARL A NEW OR PREDEFINED REPORT NAME: ADRLIST

Press RETURN to continue, ? for HELP or ESC to EXIT

ADRLIST-SELECTED

After ADRLIST has been selected, the Design Reports menu is dislayed for the next step.

Slep 1: REPORT LAYOUT

Step 2: DATA OUTPUT AREAS

Optional Step 3: SORT PRIORITY

Optional Step 4: DATA FROM OTHER FORMS

Step 5: REPORT INSTALLATION

— DESIGN REPORTS MENU — Report Name: ADRLIST

Form Name: ADDRESS

ENTER A STEP NUMBER: \_

Press RETURN to continue, ? for HELP or ESC to EXIT

Note that Form Name is ADDRESS and Report Name is ADRLIST. The first thing we will do is to ayout the report

USER Enter 1 and

Press RETURN

DESIGN YOUR REPORT IN THIS AREA

--- REPORT LAYOUT ---

Press RETURN to clear screen or ? for HELP

You are now ready to type out the report on the display screen.

USER: Press RETURN

```
F - Word forward V - Insert char  
A - Word back  
G - Erase char  
Z - Scroll up  
C - Group forw'd  
T - Erase word  
W - Scroll down  
R - Group back  
Y - Erase line  
O - Ignore & exit  
U - Line to top  
ESC - Save & exit  
HEADING LINE: COL: AREA NAME:
```

The above Control Key Commands are used to move around the typed-in report.

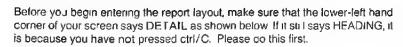
## NOTE

The word HEADING in the lower left-hand corner. You are entering a LIST-type report. LIST-type reports have several levels available: HEADING, DETAIL, SUBTOTAL, TOTAL and FOOTING. To get to the different levels, you must press ctrl/C. For example: HEADING is the first level -- you must press ctrl/C to get to the next level called: DETAIL. For this tutorial example, the only level used is DETAIL.

#### NOTE

Although ctrl/C and ctrl/R are used during report layout to go to and from levels during list-type report definition, they are used to "page forward" in every other case. See Appendix F of the Reference Manual. In those cases, the word "Page" is seen rather than "Group" as in this area.

USER: Press ctrl/C



Type the following report layout.

<b>⟨BLANK⟩</b>		
<blank></blank>		
Company Name:		
Address:		
C1ty:	State:	Zip:
Phone No.:		
REPORT LAY	OUT - CONTROL KEY	COMMANDS
		N - Insert line
A - Word back	G - Erase char	Z - Scroll up
C - Group forw'd	T - Erase word	W - Scroll down
·		0 - Ignore & exit
,		ESC - Save & exit

# NOTE

Typing "<BLANK>" forces a blank line during printing of the report. Therefore, each record for ADDRESS will have two blank lines at its beginning, effectively double spacing before the next one prints.

USER: Press ESCAPE

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Once report layout is completed, the report will be SAVED as shown below.

<b>CBLANKS</b>		
<b>GBLANK&gt;</b>		
Company Name:		
Address:		
City:	State: Zip:	
Phone No.:		
REPORT LA	YOUT - CONTROL KEY COMMANDS -	
–	V - Insert char N - Insert line	
A - Word back	G - Erase char Z - Scroll up	
A - Word back C - Group forwid	G - Erase char Z - Scroll up T - Erase word W - Scroll down	
A - Word back C - Group forwid	G - Erase char Z - Scroll up	
A - Word back C - Group forwid R - Group back	G - Erase char Z - Scroll up T - Erase word W - Scroll down	
A - Word back C - Group forwid R - Group back	G - Erase char Z - Scroll up T - Erase word W - Scroll down Y - Erase line O - Ignore & exit	
A - Word back C - Group forwid R - Group back Q - HELP	G - Erase char Z - Scroll up T - Erase word W - Scroll down Y - Erase line O - Ignore & exit U - Line to top ESC - Save & exit	

The Design Reports menu will now be displayed for the next step.

Step 1: REPORT LAYOUT

Step 2: DATA OUTPUT AREAS

Optional Step 3: SORT PRIORITY

Optional Step 4: DATA FROM OTHER FORMS

Step 5: REPORT INSTALLATION

- DESIGN REPORTS MENU ----

Form Name: ADDRESS

Report Name: ADRLIST

ENTER A STEP NUMBER: \_

Press RETURN to continue, ? for MELP or ESC to EXIT

The next step is to define the DATA OUTPUT AREAS

USER\* Enter 2, and

Press RETURN

The Control Key Command menu is displayed for defining the data output areas

<b>CELANIC</b>	
◆BLANK>	
Company Name:	
Address:	<del></del>
City:	State: Zip:
Phone No.:	
DATA OUTPUT AREAS	- CONTROL KEY COMMANDS
F - Word forward	B - Define data output area
A - Word back	Z - Scroll up
C - Group forward	W - Scrott down
R - Group back	0 - Ignore & exit
Q - HELP	ESC - Save & exit
DETAIL LINE: COL:	AREA NAME:

USER: Position cursor at first underscore after Name:

Press ctrl/B

## NOTE

When initially defining output area names, you must position the cursor at the beginning of the output area. Once the output area has been defined, you may place the cursor anywhere in the output area to do other things.

Address:	
City: State: Zip:	_
Phone No.:	_
DATA OUTPUT AREA DEFINITION	
NAME THE DATA OUTPUT AREA HERE: NAME	
FORMULA FOR COMPUTATION OF OUTPUT (OPTIONAL):	
USER Type NAME	
Press RETURN three times, or ESCAP	E on
<blani></blani>	
<planc></planc>	
Company Name:	_
Address:	_
City:State:Zip:	_
Phone No.:	_
DATA OUTPUT AREAS - CONTROL KEY COMMANDS -	
F - Word forward B - Define data output	area
A - Word back Z - Scroll up C - Group forward W - Scroll down	
R - Group back 0 - Ignore & exit	
Q - HELP ESC - Save & exit	
DETAIL LINE: COL: AREA NAME: NAME	

Use the same names for the remaining data output areas as were used for the ADDRESS form. Depress the ctrl/F and ctrl/B combinations for each area and name as follows:

- ADDR
- CiTY
- 2. 3. STATE
- 4, ZIP
- PHONE

Note that none of these output areas contain a formula.

When you are done:

USER: Press ESCAPE

The Design Reports menu is displayed for the next step.

Step 1: REPORT LAYOUT

Step 2: DATA OUTPUT AREAS

Optional Step 3: SORT PRIORITY

Step 4: DATA FROM OTHER FORMS Optional

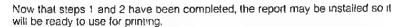
Step 5: REPORT INSTALLATION

DESIGN REPORTS MENU -

Report Name: ADRLIST Form Name: ADDRESS

ENTER A STEP NUMBER: ...

Press RETURN to continue, ? for HELP or ESC to EXIT





We are now going to INSTAL  $_{\rm L}$  our completed report. Optional Steps 3 and 4 are covered in the Advanced Tutorial Guide

USER: Enter 5 and

Press RETURN

You will be prompted to place the INSTALL disk in drive A. The screen display will show the words "INSTALLING"  $\,$ 

## INSTALLING REPORT



When installation is completed, you will be prompted to put the DESIGN REPORTS disk in drive A and then you will be returned to the Report Directory

REPORT

DESCRIPTION

ADRLIST

MY ADDRESS LIST

REPORT DIRECTORY

GIVE PEARL A NEW OR PREDEFINED REPORT NAME: ADRLIST

Press RETURN to continue, ? for HELP or ESC to EXIT

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# USER: Press ESCAPE

Report installation is now complete. The next part of the tutorial will show you how to enter data into your program ADDRESS. You can press ESCAPE once to return to the Service Directory. You may then exit from PERSONAL PEARL and return to CP/M or chose a service from the Service Directory, i.e., select option 3, ENTER DATA.

## SECTION 3. ENTER DATA

You are ready to ENTER DATA into ADDRESS. If you have return to the CP/M A> prompt, place your ENTER DATA disk in drive A and enter the command PEARLED. If you are at the Service Directory after installing the report, then enter Option 3.

A>PEARLED
Depress RETURN

The Enter Data screen is displayed.

PERSONAL PEARL Copyright by PEARLSOFT, 1982 All rights reserved

00000	00	0	0	0000	0000	0	000	00
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000	0	0 0	l	0	000		000	00
0	0	0.0	ı	0	0		0	0
00000	0	00	1	0	0000	0	0	0
0000	<b>1</b> 0	00	٨	000	m	0	00	
	-		-			-		
0	0	0	0	Ç	)	0	0	
٥	0	000	00	0	)	00	000	
0	0	0	0	- 0	)	0	0	
0000	00	0	0	0	)	0	0	
		×	-					

YOUR SERIAL NUMBER IS: AAA-nnnn\_\_\_\_, ver. 1.xx

Press RETURN to continue, ? for HELP or ESC to EXIT

ter .

USER: Depress RETURN

LICENSED TO: \_\_

When RETURN is depressed, the Form Directory menu is displayed.

FORM	DESCRIPTION	
ADDRESS	MY ADDRESS BOOK	
	FORM DIRECTORY	
GIVE PEARL A	NEW OR PREDEFINED FORM NAME:	
Press RETURN	to continue, ? for HELP or ESC to EXIT	
USER: Enter	ADDRESS and	
Press	RETURN	
FORM	DESCRIPTION	
ADDRESS	MY ADDRESS BOOK	
MODITIES	He Canada poor	
	FORM DIRECTORY	
	A NEW OR PREDEFINED FORM NAME: ADDRESS	
Deage DETIIN	N to continue, ? for HELP or ESC to EXIT	
riess reluc	ADDRESS-SELECTED	

Once ADDRESS is selected, the ADDRESS form will be displayed for data entry.

Company Name:	
Address:	
City:	State:Zip:
Phone No.:	

U - Save/replace record B - Switch ADD/EDIT
N - Duplicate last item Z - Get next record
P - Print current record W - Get previous record
I - Tab forward O - Delete current record
Q - HELP ESC - EXIT

Additional editing comands are as follows:

S or H - Cursor left C - Page forward
D or L - Cursor right R - Page back
E or K - Cursor up
X or J - Cursor down

You may now begin adding information (records) into the ADDRESS form. Notice that ADD appears on the bottom line of the screen. You cannot EDIT any records until information has been ADDed first. See CUSTOMIZING (the last Easy Tutorial) for a brief example of how to use this function.

Cursor is at Company Name: \_ Type: JOHN'S COMPUTER COMPANY Press RETURN

Cursor is at Address: \_ Type: 123 MAIN STREET Press RETURN

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Cursor is at City: _	Type: CHARLO Press Ri	OTTE ETURN	
Cursor is at State: _	Type: NC		<b>O</b>
Cursor is at Zip: _	Type; 22232 Press Ri	ETURN	
Cursor is at Phone No.: _	Type: 201-322 Press Ri		
Information for this record	has been completed		
Press ctrl/U or press RET form.	URN This actually ADD	s the record to the ADDR8	ESS
Company Name:		_	
Address:		_	
City:	State: Zip:		
Phone No.:			
ENTED DAYS C	ONTROL KEY COMMANDS		
U - Save/replace record		_	
N - Duplicate last item	Z - Get next record		
P - Print current record	W - Get previous record		
I - Tab forward		rd	
Q HÉLP ADD R	ESC - EXIT		
AUU R	ECORD ADDED		

Note the words RECORD ADDED indicating that the information you have just entered has been added as a record to the ADDRESS form.

ADD another address.

Cursor is at Company Name =	Type: COMPUTER SCIENCE CORP Press RETURN

Type, 987 TRADE STREET Cursor is at Address: \_

Press RETURN

Type: SALEM Cursor is at City. \_

Press RETURN

Type, OR Cursor is at State: \_

Cursor is at Zip! ...

Type: 97321 Press RETURN

Туре: 503-693-3333 Cursor is at Phone No.: \_

Press RETURN

Information for this record has been completed

Press ctrl/U or press RETURN

Company Name:	
Address:	
City: State:Zip: .	
Store Mr	

\_ ENTER DATA \_ CONTROL KEY COMMANDS \_ U - Save/replace record B - Switch ADD/EDIT N - Duplicate last item Z - Get next record P - Print current record W - Get previous record I - Tab forward 0 - Delete current record

ESC - EXIT Q - HELP RECORD ADDED ADD

ADD another address.

Cursor is at Company Name: \_ Type: SIMON'S COMPUTER NETWORK

Press RETURN

Cursor is at Address: \_ Type: 64 NORTH 82ND AVENUE

Press RETURN

Cursor is at City: \_ Type: RALEIGH

Press RETURN

Cursor is at State: \_ Type; NC

Cursor is at Zip: \_ Type: 22333

Press RETURN

Cursor is at Phone No.: \_ Type: 201-622-9732

Press RETURN

Information for this record has been completed.

Press ctrl/U or press RETURN

We have provided three examples of entering information. You may either ADD (or EDIT) more addresses or go to the next service step and PRODUCE REPORTS.

USER: Press ESCAPE

PERSONAL PEARL will respond with the message EXIT? (Y/N)

JSER: Press Y

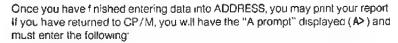
Press RETURN

NOTE:

If you were to answer with an "N", then you would be allowed to continue to ADD (or EDIT) data.

After entering "Y", a service menu will be displayed on the screen. If you wish to exit PERSONAL PEARL at this time and return to CP/M, the press ESCAPE twice. Otherwise, select option 2, PRODUCE REPORTS.

# SECTION 4. PRODUCE REPORTS



After A>, enter PEARLPR and press RETURN.

ff you have not returned to CP/M but are still in the Service Directory, select 2 to PRODUCE REPORTS, see Page 69.

The Produce Reports screen is displayed after entering PEARLPR:

PERSONAL PEARL Copyright by PEARLSOFT, 1982 All rights reserved

00	000	000	XXX	O	000	00	000	0	0	0000	000000
0	0	0	0	0	٥	û	0	0	0	0	0
00	000	000	000	0	0	0	0	0	0	0	000
0		0	0	0	0	0	0	0	0	0	0
0		0	0	00	000	00	000	(	0000	0000	00000
00	000	000	000	0000	00	00	00	000	000	00000	00000
0	0	0		0	0	0	0	0	0	0	0
00	000	000	)	0000	00	0	0	000	200	0	0000
0	0	Q		0		0	0	0	0	0	0
0	0	000	000	0		00	00	0	0	0	00000

LICENSED TO: \_\_\_\_\_

YOUR SERIAL NUMBER IS: AAA-noon\_\_\_\_\_ ver 1.xx

Press RETURN to continue, ? for HELP or ESC to EXIT  $\ \_$ 

USER: Depress RETURN

After pressing RETURN, the Form Directory is displayed.

FORM	DESCRIPTION
ADDRESS	MY ADDRESS BOOK
	FORM DIRECTORY
Press RETURN	to continue, ? for HELP or ESC to EX
O: Entre	ADDRESS and
Press	RETURN
FORM	DESCRIPTION
IDDRESS	MY ADDRESS BOOK
	A NEW OR PREDEFINED FORM NAME: ADDRES
Press RETUR	WN to continue, ? for HELP or ESC to E
	ADDRESS-SELECTED

Now the Report Directory is displayed so that you may choose the report to be printed for ADDRESS  $\,$ 

A.

REPORT DESCRIPTION

ADRLIST MY ADDRESS LIST

REPORT DIRECTORY

Form Name: FORM

GIVE PEARL THE NAME OF THE REPORT: \_\_\_\_\_

Press RETURN to continue, ? for HELP or ESC to EXIT

\*

USER: Enter ADRLIST and

Press RETURN

REPORT DESCRIPTION

ADRILIST MY ADDRESS LIST

- REPORT DIRECTORY -----

Form Name: ADDRESS
GIVE PEARL THE NAME OF THE REPORT: ADRLIST

Press RETURN to continue, ? for HELP or ESC to EXIT LOADING REPORT

Once ADRLIST has been "loaded", the Produce Reports menu is displayed so that you may select the desired format.

Optional Step 1: SELECTION VALUES

Optional Step 2: PRINTOUT DETAILS

Step 3: FINAL REPORT

PRODUCE REPORTS -

Form Name: ADDRESS

Report Name: ADDRESS

ENTER A STEP NUMBER: \_

Press RETURN to continue, ? for HELP or ESC to EXIT

USER: Enter 2 and

Press RETURN

NUMBER OF REPORT LINES PER PAGE 53 TOTAL LINES PER PAGE (0 = form feed) FILE NAME FOR REPORT (Blank = Printer, CON: = Console) MELTIPLE FORMS ON ONE PAGE: (FIXED reports only) NUMBER OF FORMS ACROSS: NA. SINGLE FORM WIDTH: NA. (Columns) - PRINTOUT DETAILS -Report Name: ADRLIST Form Name: ADDRESS You may make changes by typing a new value. Press RETURN to continue, ? for HELP or ESC to EXIT USER: After TITLE, \_\_\_\_, Press RETURN After NUMBER OF REPORT LINES . . ., Enter 60 and Press RETURN After TOTAL LINES PER PAGE, Press RETURN After FILE NAME FOR REPORT, Press RETURN After NUMBER OF FORMS ACROSS, Press RETURN After SINGLE FORM WIDTH. Press RETURN

TITLE: \_\_\_\_

PRINT DETAIL is now complete.

USER: Press RETURN, or ESCAPE

Optional Step 1: SELECTION VALUES

Optional Step 2: PRINTOUT DETAILS

Step 3: FINAL REPORT

PRODUCE REPORTS —

Form Name: ADDRESS

SS Report Name: ADRLIST

ENTER A STEP NUMBER: \_

Press RETURN to continue, ? for HELP or ESC to EXIT

USER: Select 3 and

Press RETURN

The video screen will display PRINTER when the report is actually printing on the printer. When this message disappears, you will have the following report:

Name: JOHN'S COMPUTER COMPANY

Address: 123 MAIN STREET

City: CHARLOTTE State: NC Zip: 22232

Phone No.: 201-322-6565

Name: COMPUTER SCIENCE CORP.
Address: 987 TRADE STREET

City: SALEM State: OR Zip: 97321

Phone No.: 503-693-3333

Name: SIMON'S COMPUTER NETWORK
Address: 64 NORTH 82ND AVENUE

City: RALEIGH State: NC Zip: 22333

Phone No.: 201-622-9732

Once the report is finished printing, the Report Directory will be displayed.

REPORT DESCRIPTION

ADRLIST MY ADDRESS LIST

Form Name: ADDRESS

GIVE PEARL THE NAME OF THE REPORT:

Press RETURN to continue, ? for HELP or ESC to EXIT

USER: Press ESCAPE

The last example in this chapter demonstrates how to "customize" the address program we have just created.

# SECTION 5. CUSTOMIZING

Customizing is the ability to change or tailor a program unit to suit our unique requirements. Often, requirements change over time. Customizing is a very important capability.

Let's say that we real ze we want the name of a "contact person" included with our ADDRESS list. In order to do this, we must go in and redesign our form and our report to accommodate an extra line being added to the layout of each. This is how we want our form and report to look now:

Company Name: _	
Contact Person:	
Address:	
City:	State: Zip:
Phone No:	

The first action we must take is to go back into the ADDRESS form we have created and then select Service Step 1, DESIGN FORMS. We then select Step 1, FORM LAYOUT. The screen will appear as it was originally designed. We will add Contact Person to the form as follows:

Company Name:		
Contact Person: .	<del> </del>	
Address:		
City:	State: _	_ Zip: 999999999
Phone No:		
FORM LA	YOUT - CONTROL KEY	COMMANDS
F - Word forward	V - Insert char	N - Insert line
A - Word back	G - Erase char	Z - Scroll up
C - Page forward	T - Erase word	W - Scrott down
R - Page back	Y - Erase line	0 - Ignore & exit
Q - HELP	U - Line to top	ESC - Save & exit
PAGE: 1 LINE: 3	COL: 52 AREA NAM	E:

### NOTE:

\*

The 9's after the zip indicate that the input area was defined as "Numeric" when the data input area was originally defined.

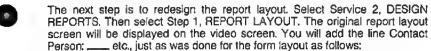
This is done by placing the cursor at the "Address:" line and then pressing ctrl/N twice. Two blank lines are added to the form. Then, the phrase Contact Person: \_\_\_\_\_\_ etc., is laid out.

The form is SAVED by pressing ESCAPE.

The next step is to select Step 2, DATA INPUT AREA. Place the cursor after the first underscore following Contact Person: \_ and press ctrl/B. The DEFINE DATA INPUT area screen is displayed and we enter CONTACT as the name for this input area as follows:

POLITORE I	Person:
Address:	
City:	State: Zip: 999999999
Phone No:	
	DATA INPUT AREA DEFINITION
NAME THE	DATA INPUT AREA HERE: CONTACT
IS INPUT	REQUIRED? (Y/N) N TYPE OF INPUT? (C/D/N) .
	/NENumbers, DEDate, NENumbers (Computations
C=Letters	

The final step in redesigning the form layout is to re-INSTALL the finished form, Step 5, FORM INSTALLATION. We must do this in order for the form to be updated with the changes that have been made.



GRANO Company Name:  Contact Person:  Address:						
Company Name:  Contact Person:  Address:  City:  State:  Zip: 999999999  Phone No:  REPORT LAYOUT - CONTROL KEY COMMANDS  F - Word forward V - Insert char N - Insert Line A - Word back G - Erase char Z - Scroll up C - Group forw'd T - Erase word W - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DOW Save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  TELAND  GLAND Company Name:  Contact Person:  Address:  City:  State:  State:  Zip: 999999999  Phone No:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT	(BLANC)					
Contact Person:  Address:				1		<b>*</b>
Address:	Company Name:			1		
Phone No:  REPORT LAYOUT - CONTROL KEY COMMANDS  F - Word forward V - Insert char N - Insert line A - Word back G - Erase char Z - Scroll up C - Group forward T - Erase word M - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  OW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  STEAMED GELANIC Company Name:  Cortact Person:  Address:  City:  State: Zip: 999999999  Phone No:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT	Contact Person: _					
Phone No:	Address:	<u> </u>				
REPORT LAYOUT - CONTROL, KEY COMMANDS  F - Word forward V - Insert char N - Insert line A - Word back G - Erase char Z - Scroll up C - Group forward T - Erase word W - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  OW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  STELAND	City:	State: _	_ Zip: 999999999			
F - Word forward V - Insert char N - Insert Line A - Word back G - Erase char Z - Scroll up C - Group forward T - Erase word W - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  STELAND Company Name:  Contact Person:  Address:  City:  State:  State:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT	Phone No:					
F - Word forward V - Insert char N - Insert Line A - Word back G - Erase char Z - Scroll up C - Group forward T - Erase word W - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  STELAND Company Name:  Contact Person:  Address:  City:  State:  State:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT	REPORT LA	YOUT - CONTROL KEY	COMMANDS			
A - Word back G - Erase char Z - Scroll up C - Group forw'd T - Erase word W - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DETAIL LINE: 5 COL: 52 AREA NAME:  DETAIL LI						
C - Group forw'd T - Erase word M - Scroll down R - Group back Y - Erase line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  DETAIL CONTACT:  DETAIL LINE: 3 COL: 52 AREA NAME:  DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  DETAIL CONTACT:  DETAIL LINE: 3 COL: 52 AREA NAME:  DETAIL LINE:						
R - Group back Y - Erase Line 0 - Ignore & exit Q - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  PLANC Company Name:  Contact Person:  Address:  City:  State:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT						
R - HELP U - Line to top ESC - Save & exit DETAIL LINE: 3 COL: 52 AREA NAME:  DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  PLANE  Contact Person:  Address:  City:  State:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT						
DW save the report layout (press ESCape) and go to Step 2, DATA OUTPUT REAS to define the the data output area for CONTACT:  **BLANC** Company Name:  Contact Person:  Address:  City:  State:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT						
REAS to define the the data output area for CONTACT:  REANED  REANED  Contact Person:  Address:  City:  State:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT						
Contact Person:  Address:  City:  State: _ Zip: 99999999  Phone No:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT	REAS to define the	the data output	area for CONTAC	T:	101701	
Address: State: _ Zip: 999999999  Phone No: DATA CUITPUT AREA DEFINITION  NAME THE DATA CUITPUT AREA HERE: CONTACT	Company Name:		<del></del>			
City: State: Zip: 999999999  Phone No:  DATA OUTPUT AREA DEFINITION  NAME THE DATA OUTPUT AREA HERE: CONTACT	Contact Person: .			1		
Phone No:	Address:					
NAME THE DATA OUTPUT AREA HERE: CONTACT	City:	State: .	Zip: 999999999			
NAME THE DATA OUTPUT AREA HERE: CONTACT	Phone No:					
FORMULA FOR COMPUTATION OF OUTPUT (OPTIONAL):						
FORMULA FOR COMPUTATION OF OUTPUT (OPTIONAL):				3		
	FORMULA FOR COMPL	JEATION OF OUTPUT	(OPTIONAL):	T N		

The final step in report tayout is to re-INSTALL the report that has been changed. Step 5, REPORT INSTALLATION. This must be done in order for the changes that have been made to take effect.

Now that both the address form and report have been redesigned and intstalled, you may select Service 3, ENTER DATA (or Service 1, ENTER DATA if you are coming in from the PEARLED program). We will be "editing" the three records that have been added to the ADDRESS form. After selecting to ENTER DATA, the blank form, with the extra new line, will be displayed on the video display as follows:

Company Name:	
Contact Person:	
Address:	
City:	State:Zip:
Phone No.:	
ENTER DATA _ CONT	TROL KEY COMMANDS
U - Save/replace record	B - Switch ADD/EDIT
N - Duplicate last item	Z = Get next record
P - Print current record	W - Get previous record
I = Tab forward	0 - Delete current record
Q ~ HELP	ESC - EXIT
ADD	

You will note that the ADDRESS form is laid out on the screen with the new line added. You will also note that we are in "ADD" mode. Since we already have three records on the file, we wish to go into EDIT mode. To do this, enter ctrl/B to toggle switch to edit. We are told we are now in EDIT mode and we are prompted to ENTER KEY. We will enter an "A" after Company Name: to obtain the first record on the file.

Company Name: A	
Contact Person:	
Address:	
City:	State: Zip:
Phone No.:	
ENTER DATA _ CON	TROL KEY COMMANDS
U - Save/replace record	8 - Switch ADD/EDIT
N - Duplicate last item	Z - Get next record
P - Print current record	₩ - Get previous record
I - Tab forward	0 - Delete current record
Q - HELP	ESC - EXIT

Now the first record we originally added will be displayed on the screen for editing. Note that the only blank area is Contact Person. The other areas have previously been filled in during the ADD operation discussed earlier.

Company Name: JOHN'S COM	PUTER COMPANY
Contact Person:	
Address: 123 MAIN STREET.	
City: CHARLOTTE	_ State: NC Zip: 22322
Phone No.: 201-322-6565_	
	TROL KEY COMMANDS
U - Save/replace record	
N - Duplicate last item	
P - Print current record	
I - Tab forward	0 - Delete current record
Q - HELP	ESC - EXIT

Company Name: JOHN'S COM	PUTER COMPANY
Contact Person: SARA JON	ES
Address: 123 MAIN STREET	
City: CHARLOTTE	_ State: NC Zip: 22322
Phone No.: 201-322-6565_	
U - Save/replace record N - Duplicate Last item	B - Switch ADD/EDIT
P - Print current record	W - Get previous record
I - Tab forward Q - HELP	0 - Delete current record ESC - EXIT
EDIT	enter key

Position the cursor to Contact Person (ctri/f) and then add the name SARA JONES. Once you have entered this name, depress ctrl/U and the screen will be displayed again (blank) with the message 'RECORD REPLACED". In order to get to the next record, press ctrl/Z twice. The next record will be displayed so you can enter the contact person for that company. The name entered here will be JOHN PHILLIPS.

Company Name: COMPUTER S	CIENCE CORP.
Contact Person: JOHN PHI	LLIPS.
Address: 987 TRADE STREE	Т
City: SALEM	_ State: OR Zip: 97321
Phone No.: 503-693-3333	
ENTER DATACONT U = Save/replace record N = Duplicate last item P = Print current record I = Tab forward Q = HELP EDIT	B - Switch ADD/EDIT Z - Get next record

Press ctrl/U again to replace the record and then press ctrl/Z to get the next record for editing. The next record will have the name ANTHONY SIMON entered into it.

Company Name: SIMON'S CO	MPUTER NETWORK
Contact Person: ANTHONY	SIMON
Address: 64 NORTH 82ND S	TREET
City: RALEIGH	_ State: NC Zip: 22333
Phone No.: 201-622-9732_	
ENTER DATA _ CON	TROL KEY COMMANDS
U - Save/replace record	B - Switch ADD/EDIT
N - Duplicate last item	Z - Get next record
P - Print current record	W - Get previous record
I - Tab forward	0 - Delete current record
Q - HELP	ESC - EXIT
EDIT	enter key

Press ctrl/U to replace the record All three records have now been replaced. If you press ctrl/Z after this last record is replaced, a message will be displayed telling you that you are at the END OF FILE. You may either ESCape from the ENTER DATA service or you may switch to ADD mode (depress ctrl/B again) to add some more records to ADDRESS, or you can press ctrl/W to get the previous record.

If you were to select Service 2, Produce Reports, you could produce a report which would show the new line of Contact Person having been added to each printed record.

# Chapter 6

# Glossary

#### CONCEPTS AS TOOLS

The concepts and terms used throughout your PERSONAL PEARL software are assembled in a glossary following each tutorial. The first glossary gives you a list of terms and definitions that are used in the first tutorial. The purpose of this list is to establish a common ground for understanding and using these terms within the context of the PERSONAL PEARL package. The second glossary, found in the Advanced Tutorial User's Guide provides advanced concept information relating to the additional PEARL functions described in that tutorial.

The concepts presented in both lists are for the most part nontechnical and descriptive, making it easier for you to understand and use PERSONAL PEARL.

TERM

DEFINITION

DATA AREA (DATA INPUT AREA, DATA OUTPUT AREA) This is a term used to describe a segment or unit of information. For example, a FORM that is used to record names and addresses will have a DATA AREA for the name and another DATA AREA for the address. These DATA AREAS are empty on a FORM that has not been filled out. A DATA AREA on a FORM is also referred to as a DATA INPUT AREA, meaning that data is to be input or recorded on a FORM.

A DATA OUTPUT AREA is a term to describe a segment or unit of information on a REPORT.

In the FORM LAYOUT described above, the underscored lines next to "Name", "Address", and "Phone" are the DATA INPUT AREAS for the FORM.

DATA AREA NAME Each DATA AREA must have a 7-character word for a name. This DATA AREA NAME is used as a reference when designing REPORTS or other FORMS on which it is required. This NAME is also used to create mathematical formulae.

DATA AREA TYPE

The DATA AREA TYPE is a term used to distinguish DATA AREAS that will contain any CHARACTER found on your keyboard from those that will only contain a DATE or from those that will only contain a NUMBER

DATA DISKETTE

This is a PRODUCTION DISKETTE that contains only the program DATA FILE and the program INDEX FILE. This diskette is generally used when more room is needed on the PRODUCTION DISKETTE to accommodate the expansion of the DATA FILE.

DATA FILE

This is a term used for files that store the completed or filted out FORMS you add to the program. This file gets

larger as you add more FORMS (data) to it

DEVELOPMENT DISKETTE

This term is used to describe the disk on which your PROGRAM FILES are found or created when you are developing the program. This is the PROGRAM DISK during development. It is generally placed on drive "B" of a two disk drive computer.

DEFINITION FILES

This is a term used for PROGRAM FILES that hold the definitions and instructions for the PROGRAM being created. This information includes the FORM and

REPORT LAYOUTS and all other program definitions you have made. These files are also referred to as PROGRAM

SUPPORT FILES.

DIRECTORY

This is the name of the PROGRAM FILE that stores a list of FILE PROGRAM NAMES or program REPORT NAMES It is often referred to by the terms PEARL DIRECTORY, FORM

DIRECTORY, and REPORT DIRECTORY

FILE

This term is used to describe a storage place. A close analogy is the filing cabinet found in most offices. Just like a filing cabinet, a file can be used to store any type of information. A program is stored in a file. In the case of PERSONAL PEARL, a program created by you is stored on several files. Some are used to store program definitions and are called PROGRAM DEFINITION FILES. Others are called DATA FILES and are used to store data such as the names, addresses and phone numbers as described in the ADDRESS lutorial. (For more information on program files

see Appendices D and E.)

**FORM** 

This term is used to describe how data is stored on a file All the forms on a file look the same and hold the same type of information or data. For example, an office may have a name and address file consisting of cards. Each card is used to record the name and address of a person. In this case, the card is the FORM on which data or information is recorded.

FORMs contain "records" of information. The term "record" is most often used in this context by data processing or programming people

FORM LAYOUT

This term is used to describe what a FORM locks like before anything has been written in it. A name and address FORM may have the following FORM LAYOUT:

<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	<del>cirick k.k.k.k.k.k.k.k.k.k.k.k.k.k.k.k.k.k.k</del>
Name and Address	FORM
Name Address Phone	
<del> </del>	<del>*****************</del>

When using PERSONAL PEARL, your first step is to design the form layout. Then you can use it to record data or information.

FORM NAME

This is the name you give to a form you are creating. It is also used to refer to a program unit (a program unit can only have one form). This name is displayed on the Form Directory.

PEARL DIRECTORY, PROGRAM DIRECTORY, REPORT DIRECTORY -- See DIRECTORY file.

PRODUCTION DISKETTE

This is a term used to describe the PROGRAM DIS-KETTE(S) when you are actually using the final product you have created. This diskette is generally placed on drive "B" of a two disk drive computer.

### **PROGRAM**

A program consists of one or more PROGRAM UNITS. These program units may be independent or they may share (transfer) information. An example of a program that consists of program units that share information is the STARTER LIBRARY that is provided with the PERSONAL PEARL package.

## PROGRAM DISKETTE

This term is used to describe the disk on which your PROGRAM FILES are found or created. These files include the DEFINITION, DIRECTORY, DATA, and INDEX FILES. The PROGRAM DISKETTE generally is placed on drive "B" of a two disk drive computer.

#### PROGRAM FILES

This is a term used for files containing the program definitions, instructions, report directories and FORMS (data) entered by you. For example, the ADDRESS program described in the tutorial consists of a FORM and a REPORT The PROGRAM FILES will contain the FORM and REPORT LAYOUTS, and all other such definitions. Other program files are the DATA FILE and the INDEX FILE.

#### PROGRAM UNIT

A program unit consists of one form, and one or more reports.

This term is used to describe an operation or function that the computer will perform. This term will be used extensively to describe functions that you have created using PERSONAL PEARL. For example, the tutorial section will guide you through the creation of an ADDRESS program unit. This ADDRESS program unit has the functions of storing the names, addresses, and phone numbers of people, and of producing a report based on the stored information.

A program unit consists of one FORM and any number of REPORTS designed specifically to the form. Once a FORM is designed and installed, PERSONAL PEARL creates a host of support files on disk which include one data file and one index file for the program unit. (For detailed discussion on the number and types of files involved in a program unit, please refer to Appendix D).

An example of a program unit would be a "CLIENT" form and a "LABELS" report. The CLIENT form would be used to capture client information, and the LABEL report would be used to produce mailing labels from the information contained on the CLIENT form.

REPORT

In PERSONAL PEARL, this term is used in much the same way that it is always used A report consists of an organized listing on paper of information or data from one or more sources or FILES. Each program or program unit you create may or may not have a report as one of its functions. In order to define a report, you must first define or create a FORM.

REPORT LAYOUT This term is used to describe what the report will look like when it is printed.

REPORT NAME

Each report is given a REPORT NAME. This name may be up to 7 characters in length and is the first step in defining a report. It is displayed on the Report Directory.

SYSTEM DISKETTES(S) This term is used to describe the disk(s) on which PER-SONAL PEARL files or PROGRAMS are found.

Other terms used may be. PERSONAL PEARL DISKETTES, FILE MAINTENANCE DISKETTE, DESIGN FORM D SKETTE, DESIGN REPORT D SKETTE, ENTER DATA DISKETTE, and PRODUCE REPORT DISKETTE. The SYSTEM DISKETTE(S) are generally placed on drive "A" of a two disk drive computer.

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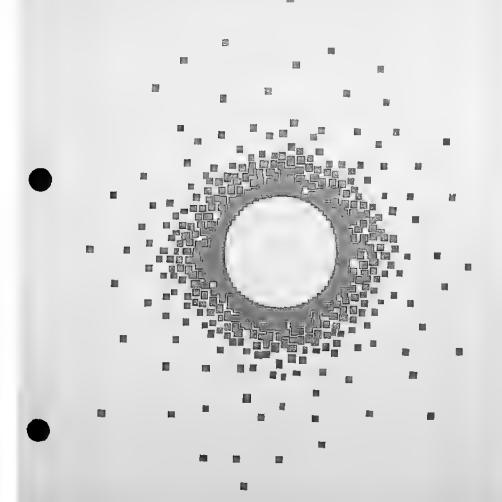
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# **ACKNOWLEDGEMENT**

PEARLSOFT would like to thank the following for their assistance, suggestions and guidance in writing the PERSONAL PEARL publications:

- 1. The Technical and Publications staff of Osborne Computer Corporation.
- 2. SoftStat Systems of Salem, Oregon.
- 3. Bill McLain of Portland, Oregon.
- Numerous individuals who worked with us during the PERSONAL PEARL beta-test release period.

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# Chapter 1

# Advanced Tutorial

# CLIENT INFORMATION AND APPOINTMENT CALENDAR

# INTRODUCTION

This chapter illustrates a more advanced program which can be developed with PERSONAL PEARL. The program outlined here is similar to the INFO-SYSTEM that comes with your PERSONAL PEARL. In fact, both programs have a "CALENDR" form. Please do not confuse them. Do not use your INFOSYSTEM disk for this tutorial.

In our example, we design a program for an engineering consultant to manage information regarding clients and appointments. The information will be used to produce an appointment calendar, mailing labels, and invoices.

The program consists of two program units. The first program unit consists of a CLIENT form and a CLIENT report to print labels. The second program unit consists of a CALENDAR form with two reports for APPOINTMENTS and INVOICES.

We will design the forms first, then proceed to design reports. When the program has been designed, the file maintenance utilities of PERSONAL PEARL will be used to move the program under development to production status and illustrate some powerful data entry techniques.

We have two main objectives in this section. First, we will show you how to use some of the optional design steps and what they can do. And second, we will show how a program grows and changes over time to adapt to your individual needs.

In this example, we assume you have become acquainted with the operation of PERSONAL PEARL by following through the step-by-step procedures in the Easy Tutorial User's Guide. For this reason, we will omit most of the design steps presented in the earlier example and refer to the LAYOUT REPORTS which provide the details for layouts and data area definitions. Now is the time

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for you to gain a better understanding of the layout reports, or prooting reports. Please take a minute to turn to Chapter 4 of the Reference Manual to learn how to produce and use layout reports. This understanding is essential before you proceed into the tutorial.

After designing the client appointment calendar, the ctrl/P option in the form layout menu and in the report layout menu was used to print report layouts. After designing the forms and reports, you can also produce layout reports to check your design against ours.

As we go through our example, we will pause for detailed looks at design steps that have not been previously presented. These are options 3 and 4 of the Design Forms and Design Reports menus plus suboptions available within each of them. The following summarizes the concepts covered:

1. Design CLIENT Form (Section 1).

Concept: Unique Index

Layout Report: FORM LAYOUT FOR CLIENT

2. Design the Appointment CALENDR (Section 2).

Concepts: Computations

Data From Other Forms

Layout Report: FORM LAYOUT FOR CALENDR

3. Design Labels (Section 3).

Concept: Multi-up Labels

Layout Report: REPORT NAME: LABELS APPLICATION NAME:

CLIENT

4. Design Appointment CALENDR Report (Section 4).

Concepts: Sorting

Data From Other Forms

Layout Report: REPORT NAME: SCHEDUL, APPLICATION NAME:

CALENDR

5. Design Invoice Report (Section 5).

Concepts: Computations

Subtotals, Headings, Footings

Layout Report: REPORT NAME: INVOICE, APPLICATION NAME;

CALENDR

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8. Produce Labels (Section 8).

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Concepts: Program Changes

Form Installation Report Installation File Maintenance Index Changes

Layout Reports: FORM LAYOUT FOR CLIENT

FORM LAYOUT FOR CALENDR

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# SECTION 1, DESIGN THE CLIENT FORM

# MAIN CONCEPT: SPECIFYING A UNIQUE INDEX

In this section, we will design a form for client information. Later, we will define an appointment calendar form which will access information from the client form based on the client's name. In order to do this, we will specify the name area of the client form as a "unique index" (Optional Step 3 -- Index for Finding Records). As stated in the introduction, we will not detail all the inputs for laying out the form or defining the data input areas because this process has been covered in the Easy Tutor at User's Guide.

For details on what we have named the data input areas and what their other specifications are, see the client form layout report shown in step 5. We created this report, after laying out our form, by using the ctrl/P option in the form layout menu.

# INSTRUCTIONS:

1. Add the name CLIENT to the Form Directory.

You will be prompted for the form description. We call it the client information form.

- Select Design Forms, Service 1.
- 3. Lay out the following using Form Layout, Step 1:

CLIENT INFORMATION FO	RM
NAYS	··
ADDRESS	
ADDRESS	
CITYS	TATE ZIP 99999
WORK PHONE HOME PH	IONE
PROJECT FORM LAYOUT - CONTROL KEY	COMMANDS
F - Word forward V - Insert char	N - Insert Line
A - Word back G - Erase char	Z = Scroll up
C - Page forward T - Erase word	₩ - Scroll down
R - Page back Y - Erase line	0 - Ignore & exit
Q HELP U - Line to top	ESC - Save & exit
page, 1 (TNE- 1 CO) • 1 ARFA N	AME:

The layout report may be produced from this menu by entering a ctrl/P. This report is a useful reference in later steps of the design process when we refer to specifications previously entered in the design.

At this point in our design, only the layout itself will appear on the layout report. As you enter more and more information about the design, it will appear in later generations of the layout report which follows this section.

4. Define the Data Input Areas, Step 2.

Go through the layout entered in the previous step and name and define the data input areas as shown on the CLIENT LAYOUT REPORT.

If you want to review your entries after defining the data input areas, return to Step 1, FORM LAYOUT, press ctri/P and you will get a printed listing of the layout of the CL ENT form.

123456789012345678901234 1 2 5 DATA AREA NAME: STATE DATA AREA TYPE: CHARACTER

22

6 DATA AREA NAME: ZIP DATA AREA TYPE: NUMBER 99999

7 DATA AREA NAME: WKPHONE DATA AREA TYPE: CHARACTER

123456789012

8 DATA AREA NAME: HMPHONE DATA AREA TYPE: CHARACTER

1234567890123

9 DATA AREA NAME: PROJECT DATA AREA TYPE: CHARACTER

1234567890123456789012345678901234567890

The first section of the report layout shows the screen as you have defined it, listing numerically the input (or output) areas you defined, in the order they were defined, i.e., 1, 2, 3, etc.

The second section of the report lists the INPUT (or OUTPUT) AREA ATTRIBUTES. Let's take the first INPUT AREA attribute as an example:

1 DATA AREA NAME: NAME DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890123 1 2 3 4 REQUIRED DATA

# WHERE:

- a. 1 is the first input area defined,
- b. DATA AREA NAME: the "name" of this input area is NAME,

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- DATA AREA TYPE: this input area will be of "type" CHAR-ACTER.
- d. You may input up to 43 characters in this line:

123456789012345678901234567890123 1 2 3 4

- e. This 'nput area will allow for up to 43 characters during data entry.
- f. Data entry into this input area is required.

The report layouts are a very useful feature of form and report definition. By referring to these reports, you can immediately find out what names you have given input (or output) areas and the attributes of each area defined. This is especially useful if you are going to be accessing data from other forms that have been defined (as described in Section 2 of this tutorial). This is because input areas that use data from other forms must have the same name and attributes of the form being called. Chapter 4 of the Reference Manual describes in detail this feature of PERSONAL PEARL.

Set Control for Index for Finding Records, Optional Step 3.

Now we come to the concept this lesson is intended to illustrate. In the following steps, we will define the name area in the client form as an "index for finding records" which will have one and only one of any particular name. We say then that "NAME" is a unique index on the client form. We could make other indices on the file if desired, but in this example the "NAME" data input area is the only index we need.

Let's take a detailed look at this step.

The form will be displayed with the "INDEX FOR FINDING RECORDS" menu displayed at the bottom. Now move the cursor to the data input area where the name is to be entered --anywhere in the area is fine. The name of the data input area, in this case NAME, will be displayed on the bottom line indicating that the cursor is in the right place.

*	CLIENT INFORMATION FORM
	NAME
	ADDRESS
•	ADDRESS
	CITY STATE ZIP 99999
	WORK PHONE HOME PHONE
	PROJECT
	INDEX FOR FINDING RECORDS - CONTROL KEY COMMANDS
	F - Forward to area B - Select data input area
	A - Back to area Z - Scroll up C - Page forward W - Scroll down
	R - Page back 0 - Ignore & exit
	Q - HELP ESC - Save & exit
	PAGE: 1 LINE: 3 COL: 6 AREA NAME: NAME
	Next type a ctrl/B to enter the "building the index" menu for the "NAME" data input area. This menu is displayed below the form. Your responses are shown in boldface.
	BUILDING THE INDEX
	WILL YOU USE THIS AREA TO IDENTIFY AND FIND INDIVIDUAL RECORDS? (Y/N) Y
;	MILL DATA IN THIS AREA UNIQUELY IDENTIFY ONE RECORD IN THIS FILE? (Y/N) Y
r.	

By answering the first question Y)es, we define the NAME data input area as an index for the form. The answer of Y)es to the second question causes the index to be unique.

A unique index has only one entry of any particular value. In our case, only one client named John Q. Doe could be entered. If we had answered N)o to the second question, thereby specifing a nonunique index, PERSONAL PEARL would allow more than one John Q. Doe to have forms in our file. One reason we are using a unique index is to assure that billable appointments are billed to the right client.

Remember that we briefly discussed the report layout of the CLIENT form in item 6 above. If ctrl/P were pressed now, the first data input area NAME would now have one more "attribute" added to it as follows:

1 DATA AREA NAME: NAME DATA AREA TYPE: CHARACTER

1234567890123456789012345678901234567890123

1 2 3

REQUIRED DATA

DATA AREA IS UNIQUE INDEX

Note that DATA AREA IS UNIQUE INDEX has been added. This shows you that NAME is a UNIQUE index on the CLIENT form and will be used for finding records.

7. Install Finished Form, Step 5.

# SECTION 2. DESIGN THE APPOINTMENT CALENDAR FORM

MAIN CONCEPTS: 1 COMPUTATIONS

2. DATA FROM OTHER FORMS

In this section we will design a form for appointments with clients. The calendar form is somewhat more complex than the client information form we created in Section 1. The calendar form performs calculations on numeric data and also accesses information from another form, namely, the CLIENT form described in Section 1. The appointment calendar will be used to create a calendar of appointments, to record meetings which have occurred and to compute billings.

By now you have had experience in form layout and in defining data input areas, so we will not detail these steps. The details for defining the data input areas are on the following calendar form layout report (see page 17) which we generated when we created our form, using the ctrl/P option on the form layout menu.

# NOTE

The CALENDR form we create here is not the same as that on the INFOSYSTEM disk,

# INSTRUCTIONS:

- Add CALENDR to the Form Directory.
- 2. Lay out the following form, Form Layout, Step 1:

APPOINTMENT CALENDAR
DATE NM/DD/YY TIME 99.99 _ M
WE:
PROJECT:
HOME PHONE: WORK PHONE:
TIME SPENT 9999.99
TIME RATE 9999.99
FEE 9999,99
MEMO
FORM LAYOUT - CONTROL KEY COMMANDS
F - Word forward V - Insert than N - Insert line
A - Word back G - Erase char Z - Scrott up
C - Page forward T - Erase word W - Scrott down
R - Page back Y - Erase line O - Ignore & exit
Q - HELP U - Line to top ESC - Save & exit
PAGE: 1 LINE: 1 COL: 1 AREA NAME:

3. Define Data Input Areas, Step 2.

Most of the data input areas are defined just as in the forms we have already discussed. However on this form, just past "WHO", are several data areas which are to be brought over from the client form.

The client's NAME, the PROJECT and the home and work telephone numbers, HMPHONE and WKPHONE respectively, are brought over from the client form.

When defining data input areas that use data from other forms, it is Important that the data input area name be the same on both forms. It is convenient to refer to the layout report for the other form to get the names.

# COMPUTATIONS

Next we will look at defining calculated data areas.

The FEE data area illustrates one of the main concepts to be examined in this section of the tutorial, FEE is a calculated data area. Entering the caculation for FEE is straightforward.

In the screen displayed next, we have moved the cursor to the data area for FEE and typed a ctrl/B. The menu then changes to display the data area definition menu.

DATE MY/DD/YY	TIME 99.99
NAME:	
PROJECT:	
HOME PHONE:	WORK PHONE:
TIME SPENT 9	
TIME RATE 9	999.99
FEE 9	999,99
MEMO	
100	
DATA INPUT AREA	AS - CONTROL KEY COMMANDS
- Word forward	B - Define data input area
- Unovi hack	7 - Scroll up
- Page forward	W - Scrolt down
- Page back	0 - Ignore & exit
- HELP	ESC - Save & exit
	DL: 16 AREA NAME:
rnen type cuin	B to display the define data area m
DATA I	INPUT AREA DEFINITION
	JT AREA HERE: FEE
S INPUT REQUIRED?	? (Y/N) N TYPE OF INPUT? N
	, D=Date, N = Numbers (computations)
=Letters/Numbers,	TATION OF IMPUT (OPTIONAL): SPENT'RA

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We have answered the questions as shown, thus naming the input area FEE, a non-required data input area of N)umbers. The computation is entered as: the product of SPENT times RATE, both of which are other data input areas on the form,

In defining computations you can use parentheses, arithmetic operators (+ -\*/), and data from the current form and other forms,

In this simple example of a computation, we use only data areas in the CALENDR form.

# DATA FROM OTHER FORMS

5. Data From Other Forms, Optional Step 4.

This section il ustrates another important concept -- how to access data from other forms. In order to access another form, we must provide a way to find the desired record from the other file. In our example, we want to access certain information from the CLIENT form we designed in Section 1. The information we access from the CLIENT form will be displayed in the CALENDR form. In order to transfer the information, we will specify CLIENT as the form name from which the information will come. The data input area "NAME" on the CLIENT form is the key for identifying the record on the CLIENT form. During ENTER DATA, when the CLIENT record has been identified, the requested information will be displayed on the CALENDR form.

When step 4 is selected from the design forms menu the following screen will be displayed.

Move the cursor to the NAME area so that NAME appears in the bottom line of the menu area.

APPOINTMENT CAL	LENDAR
DATE MINDO/YY TIME 99	7.99 _ M
NAME:	
	WORK PHONE:
TIME SPENT 9999.99 TIME RATE 9999.99	
FEE 9999.99	
MEMO	
MEMO	
DAYA FROM OTHER FORMS	- CONTROL KEY COMMANDS
F - Forward to area	B - Select data input area
A - Back to area	Z - Scroll up
C - Page forward	W - Scroll down
R - Page back	0 - Ignore & exit
Q - HELP	ESC - Save & exit
PAGE: 1 LINE: 5 COL: 5	AREA NAME: NAME

Next type ctrl/B, which will bring up the following menu. Your response is shown in boldface.

DOES DATA IN THIS AREA IDENTIFY AND LINK ANOTHER FORM? (Y/N) Y

PAGE: 1 LINE: 5 COL: 5 AREA NAME: NAME

By answering the questions as shown above, we have defined access to the client form using the name area. NAME is then the "contact key" for sending information from the CLIENT form to the CALENDR form. This key is also known as a "path key" since it defines the path of information between the forms.

Next we proceed to define other data input areas to be carried across from the other form. To do this, move the cursor to the next data input area to be defined, in this case, the PROJECT area so that PROJECT appears in the bottom line of the menu as shown below:

DATA FROM OTHER FORMS - CONTROL KEY COMMANDS

F - Forward to area B - Select data input area
A - 8ack to area Z - Scroll up
C - Page forward W - Scroll down
R - Page back 0 - Ignore & exit
G - HELP ESC - Save & exit

PAGE: 1 LINE: 6 COL: 5 AREA NAME: PROJECT

Next type ctrl/B to define the data input area. This will cause the following menu to be displayed.

WILL DATA IN THIS AREA IDENTIFY AND LINK ANOTHER FORM? (Y/N) N

IS DATA FROM THE OTHER FORM BROUGHT INTO THIS
AREA FOR DISPLAY ONLY? (Y/N) Y
PAGE: 1 LINE: 6 COL: 5 AREA NAME: NAME PROJECT

The responses we have made will identify the form to access and indicate that some other data input area will provide a way to find the desired record (in this case, we have already indicated that NAME will provide the identifying "contact key" to find the form).

The response to the last question is required only when the second question is answered "N". f "Y" is answered to the "display only", question, then the data disp ayed is always the same as that in the client form. If "N" is answered, then the data is brought over when the data area is edited and remains the same even if the client form is updated.

The other areas, home and work phone, are also accessed from the client form with the same responses used for the PROJECT area.

6. Study Report Layout for CALENDR.

	APPOINTMENT CALENDAR	_
DΑ	TE1 TIME2 3 M	
NA		.4
PR	OJECT:5	
	HOME PHONE:	
	TIME SPENT8	
	TIME RATE9	
	<del></del>	
	FEE10	
ME	MO	_11
uc	MO	12
IN	PUT AREA ATTRIBUTES:	
7	DATA AREA NAME: ADATE DATA AREA TYPE: DATE	
7	DATA AREA NAME: ADATE DATA AREA TYPE: DATE MM/DD/YY	
7	DATA AREA TYPE: DATE	
1	DATA AREA TYPE: DATE  MY/DD/YY  12345678  REGLIRED DATA	
7	DATA AREA TYPE: DATE  MY/DD/YY  12345678	
	DATA AREA TYPE: DATE  MY/DD/YY  12345678  REGLIRED DATA	
	DATA AREA TYPE: DATE  NY/DD/YY  12345678  REGLIRED DATA  DATA AREA IS NON UNIQUE INDEX	
	DATA AREA TYPE: DATE  NM/DD/YY  12345678  REGLIRED DATA  DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME  DATA AREA TYPE: NUMBER  99.99	
	DATA AREA TYPE: DATE  NM/DD/YY  12345678  REQLIRED DATA  DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME  DATA AREA TYPE: NUMBER  99.99  12345	
	DATA AREA TYPE: DATE  NM/DD/YY  12345678  REGLIRED DATA  DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME  DATA AREA TYPE: NUMBER  99.99	
	DATA AREA TYPE: DATE  NY/D2/YY  123-5678  REGLIRED DATA  DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME  DATA AREA TYPE: NUMBER  99-399  12345  REQUIRED DATA	
2	DATA AREA TYPE: DATE  NM/D2/YY  12345678  REGLIRED DATA  DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME  DATA AREA TYPE: NUMBER  92.99  12345  REQUIRED DATA	
2	DATA AREA TYPE: DATE  NM/DD/YY  12345678  REGLIRED DATA  DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME  DATA AREA TYPE: NUMBER  99.99  12345  REGUIRED DATA  DATA AREA NAME: AMPM  DATA AREA NAME: AMPM  DATA AREA TYPE: CHARACTER	
2	DATA AREA TYPE: DATE NM/D2/YY 12345678 REGLIRED DATA DATA AREA IS NON UNIQUE INDEX  DATA AREA NAME: ATIME DATA AREA TYPE: NUMBER 92.99 12345 REGUIRED DATA  DATA AREA NAME: AMPM	

4 DATA AREA NAME: NAME DATA AREA TYPE: CHARACTER

> 123456789012345678901234567890123456789012345678 1 2 3

REQUIRED DATA

DATA AREA IS NON UNIQUE INDEX FORM: <CLIENT> ACCESS KEY

5 DATA AREA NAME: PROJECT DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890123456 2 FORM: <CLIENT> DISPLAY ONLY

6 DATA AREA NAME: HMPHONE DATA AREA TYPE: CHARACTER

123456789

FORM: <CLIENT> DISPLAY ONLY

7 DATA AREA NAME; WICHONE DATA AREA TYPE: CHARACTER

23276

FORM: <CLIENT> DISPLAY ONLY

8 DATA AREA NAME: SPENT DATA AREA TYPE: NUMBER 9009,99 1234567

9 DATA AREA NAME: RATE DATA AREA TYPE: NUMBER 9999.99 1234567

10 DATA AREA NAME: FEE DATA AREA TYPE: NUMBER

9999.99

COMPUTATION: SPENT\*RATE 11 DATA AREA NAME: AMEMO1 DATA AREA TYPE: CHARACTER

> 12345678901234567890123456789012345678901234567890 1 2

12 DATA AREA NAME: AMEMOZ DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890 1 2 3 4 5

Note that DATA INPUT AREAS 4, 5, 6 and 7 all received data from the CLIENT form described in Section 1. Thus, you would want to be sure that the DATA AREA NAMEs used in the CALENDR form are the same as those used in the previously described CLIENT form. If the names are different, you would want to correct them now, or you would not be able to use the CALENDR form.

Also note that the DATA INPUT AREA called NAME on the CALENDR form is a non-unique index and that it is the "access" key to CALENDR. The other input areas are for "display only".

7. Install Finished Form, Step 5.

# SECTION 3. DESIGN LABELS

# MAIN CONCEPT: MULTI-UP LABELS

In this section we will examine a simple fixed-type report for the CLIENT form that we designed in Section 1. This report may be printed out multi-up. That is, the report may be printed in several columns as for label stock which is several labels across. This section and Section 8 work together to produce multi-up labels. The report design is described here and Section 8 shows how to print the labels.

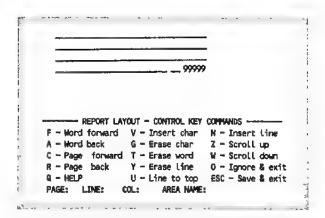
We will also set the sort priorities so that the labels are printed in alphabetical order within zip code. The form name for the file is CLIENT

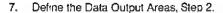
# INSTRUCTIONS:

- Select Form CLIENT.
- 2. Select Service 2, Design Reports.
- 3. Add the name LABELS to the Report Directory.
- 4. When prompted, select to Design From Scratch, Option 3.

You will be prompted for the report type (fixed, list or SuperCatc). In order to generate multi-up reports, the LABELS report must be specified as a FiXED type.

- 5. Describe the report as "multi-up labels".
- 6. Create the following (fixed) Report Layout, Step 1:







For details used to define the data output areas, refer to the layout report for the LABELS report we created using the ctrl/P option when we designed our report. The layout report may be reviewed in Chapter 4 of the Reference Manual.

#### NOTE

During the design reports process (Step 1), you can use the ctrl/P option to produce a copy of the LABELS layout report to check your definitions against ours.

8. Define the Sort Priority, Optional Step 3.

The following menu will be displayed:

Enter R below area name to reverse order Press RETURN to continue, ? for HELP, or ESC to EXIT

We have entered the names of two data output areas on which to sort, ZIP and NAME. Since ZIP is first, it is the main sort priority. This means the report will be in zip code order, and when the zip codes are the same, the report will be in name order.

Since both of the data output areas we are sorting by are to be in ascending order, it was not necessary to enter any R's to indicate reverse order. After entering ZIP and NAME in sort areas, hit ESCAPE to save and exit.

9. Install Finished Report, Step 5.

NOTE

See Section 8 on how to produce multi-up label reports.

RE	PORT NAME: LABELS, FORM NAME: CLIENT
=	2 2 3 4 5 _ 6
RE	PORT DESCRIPTION: MAILING LABELS PORT TYPE: FORM RT SEQUENCE: ZIP.NAME
RE	PORT OUTPUT AREA ATTRIBUTES:
1	DATA AREA NAME: NAME
	1234567890123456789012345678901234 1 2 3
2	DATA AREA NAME: AD1
	1234567890123456789012345678901234 1 2 3
3	DATA AREA NAME: AD2
	1234567890123456789012345678901234 1 2 3
4	DATA AREA NAME: CITY
	1234567890123456789012345 1 2
5	DATA AREA NAME: STATE
	12
6	DATA AREA NAME: ZIP 99999 12345

### SECTION 4. DESIGN APPOINTMENT CALENDAR REPORT



MAIN CONCEPTS: 1. SORTING

2. DATA FROM OTHER FORMS

In this section, we will create a report for the calendar form which accesses information from an external (sending) form. In this example, the other form is the client form, from which we will get the client's phone number using the client's name to find the right form.

Also illustrated is another example of sorting. In this case, we will sort by date, and by time to get the appointments into temporal order. The form name is CALENDR.

#### INSTRUCTIONS:

- 1. Select CALENDR from the Form Directory.
- 2. Select DESIGN REPORTS, Service 1.
- 3. Add SCHEDUL, a list type report to the Report Directory
- 4. Design from Scratch, Option 3.
- 5. Create the following Report Layout, Step 1.

The layout of a list-type report has several special features of which you'll need to be aware. Each line contained in the report layout will be a member of one of several groups. These groups are: HEADING, DETAIL, SUBTOTAL, TOTAL and FOOTING. The group to which the current cursor position belongs is indicated in the lower left-hand corner of the report layout menu. To change the group, type a ctrl/C By typing a series of ctrl/C's, you can cycle through all the report line groups.

Note the use of <BLANKO to force blank lines in the report. You'll remember from the preceding tutorial that typing <BLANKO creates a blank line.

Also note the use of PAGE ####. Four pound signs in a row is a special symbol for PERSONAL PEARL and will be replaced with the current page number when the report is produced.

At this point, you may list the report layout by depressing ctrl/P. For a detailed discussion of this special layout report feature, see Chapter 4, Design Aids, of the Reference Manual. The report layout and data output area definitions for this report follow this section.





OBLANKO DATE	TIME	CLIENT	н	OME	WORK		
BLANK> M/DD/Y1	99.99						
BLANKS			PAGE	### <del></del>			
		LAYOUT - CONTROL KE					
: — Wor L — Wor	d forward d bark	V - Insert char G - Erase char	N - Insert t	ine o			
: - Gro	up forwid	T - Erase word	W - Scrott d	- DWITI			
		Y - Erase line U - Line to top					
- HEL	P LINE.	U - Line to top COL: AREA NAME	ESC - Save &	exit			
	LINE	OGE (SIGN STE	•				
42.2.	LINCI	TODAS (MILITA IN THE	•				470
	LINCI	CHIEF THE PARTY OF	•				
	LINE		•				
Grouj	os were :	as follows	•				
	os were :		•				•
Group	os were : DING.					=	•
Group HEAC	os were :	es follows <sup>.</sup>				-	
Group HEAD	os were :	es follows: — appointment cal		HOME	WORK	-	•
Group HEAD COLANG DATE	os were : DING. > TIME	es follows: — appointment cal				-	•
Group HEAD	DING.	es follows: — appointment cal				-	•
Group HEAD BLANK DETA	os were : DING. TIME	es follows: — appointment cal	endar			-	
Group HEAD BLANK DATE BLANK DETA	DING.  TIME  VIY 99.99	es follows:  — appointment cal  Client	endar			=	
Group HEAD  OBLANK DATE  OBLANK DETA  MM/DD	DING.  TIME  VIY 99.99  FiNG:	es follows:  — appointment cal  Client	endar			=	

See the Report Layout for SCHEDUL following this section



6 Define the Data Output Areas, Step 2

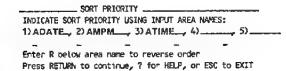
Refer to the layout report following this section for details on defining the data output areas

Note that we intend to send information from the Client Information Form to this report so the names of the data areas to be output must be the same as those defined in the CLIENT form

#### SORTING

Sort Priority, Optional Step 3.

We have defined the sort priorities as follows.



This will result in a time within date order. Note the use of the "AM" or "PM" data area to put morning times before afternoon times.

## DATA FROM OTHER FORMS

8 Data From Other Forms Optional Step 4.

To define the data to be accessed from the client form, first place the cursor on the NAME area which we will use to find the correct client form. When the cursor is in the right place, NAME will appear in the last line of the data from other forms menu.

GELANIO DATE TIME	CLIENT	HOME	WORK	
GEAWS MM/DD/YY 99.99				
GBLAW/>		PAGE ####		
DATA FROM O	THER FORMS - CON	rol key commands		
	area B ~	Select data input area		
A - Back to are	2 -	Scroll up		
C - Group forwa R - Group forwa	ra w -	Scroll down		
Q - HELP	F\$C	Ignore & exit - Save & exit		
	COL: 17 AREA	NAME: NAME		
Press ctrl/B to	display the ne	ext menu.		*
	G DATA FROM ANOT ER FORM NAME? C			
DOES DATA IN TH	IS AREA IDENTIFY RM? (Y/N) Y	RECORDS		
Move the cu	roor on the th	e next data area to be	accessed the hom	10

phone number. The data area name "HMPHONE" will appear in the las line of the menu when the cursor is positioned correctly.

Press ctrl/B to bring up the next menu.

USING DATA FROM ANOTHER FORM
WHAT IS THE OTHER FORM NAME? CLIENT\_
DOES DATA IN THIS AREA IDENTIFY RECORDS
FROM ANOTHER FORM? (Y/N) N

Note we have specified the form from which to access the data, but we have not set this area as the identifying area, as we are using NAME to find the form.

Define the work phone number in an same manner.

9. Install Finished Form, Step 5

REPORT NAME: SCHEDUL, FORM NAME: CALENDR

HEADING

APPOINTMENT CALENDAR

CILANED
DATE TIME CLIENT HOME WORK

CBLANED

DETAIL

1 2 3 4 5

FOOTING

CBLANED

PAGE ####

REPORT DESCRIPTION: APPOINTMENT SCHEDULE

REPORT TYPE: LIST

SORT SEQUENCE: ADATE\_AMPM\_ATIME

### REPORT OUTPUT AREA ATTRIBUTES:

1 DATA AREA NAME: ADATE
MM/DD/YY
12345678

2 DATA AREA NAME: ATIME 99.99

3 DATA AREA NAME: NAME

123456789012345678901234567890 1 2 3 FORM: <CLIENT> ACCESS KEY

4 DATA AREA NAME: HMPHONE

123456789012

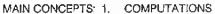
FORM: <CLIENT> PRINT/DISPLAY ONLY

5 DATA AREA NAME: WKPHONE

12345678901

FORM: <CLIENT> PRINT/DISPLAY ONLY

### SECTION 5. DESIGN INVOICE REPORT



2. SUBTOTALS HEADINGS, FOOTINGS

In this section, we will design a report which will perform computations and subtotal breaks. This report is designed from the CALENDR program unit.

### INSTRUCTIONS:

- 1. Select CALENDR from Form Directory.
- 2. Select DESIGN REPORTS, Service 2.
- 3. Add INVOICE to the report directory as a list-type report.
- 4. Choose DESIGN REPORT FROM SCRATCH, Option 3.
- 5. Lay out the following report.

(BLANK)	ER ENGINEERING SERV	TCES	
CELANO			
	INVOICE		
(SLANK)			
(BLANK)			
DATE M	-		
DATE M	EMO	TIME	FEE
	<u> </u>		
CBLANC>			99999.99
GLANO			99999.99
SELANIC> MM/DD/YY		999.99	99999.99
GLANC MM/DD/YY		999.99 ALS: 999.99	99999.99
CELANC> MM/DD/YY  CPAGE> REPORT LAYOU Word forward	TOT  - CONTROL KEY COV  V - Insert char	999.99  ALS: 999.99  MANDS  N - Insert L	99999.99 99999.99
CBLANC> MM/DD/YY  CPAGE> REPORT LAYOU Word forward	TOT	999.99  ALS: 999.99  MANDS  N - Insert L	99999.99 99999.99
CELANIC MM/DD/YY	TOT  - CONTROL KEY COM  V - Insert char  G - Erase char  T - Erase word	999.99  ALS: 999.99  MANDS  N - Insert 1: 2 - Scroll u W - Scroll d	99999.99 99999.99 ine
CELANC- MM/DD/YY  CPAGE> REPORT LAYOU Word forward Word back Group forwid Group back	TOT  T - CONTROL KEY COM  V - Insert char  G - Erase char  T - Erase word  Y - Erase Line	999.99  ALS: 999.99  MANDS  N - Insert L  Z - Scroll u  W - Scroll d  O - Ignore &	99999.99 99999.99 ine oben exit
CELANC- MM/DD/YY  CPAGE> REPORT LAYOU Word forward Word back Group forwid Group back	TOT  - CONTROL KEY COM  V - Insert char  G - Erase char  T - Erase word	999.99  ALS: 999.99  MANDS  N - Insert L  Z - Scroll u  W - Scroll d  O - Ignore &	99999.99 99999.99 ine oben exit

When laying out this report, each line will belong to one of five groups: HEADING, DETAIL, SUBTOTAL, TOTAL and FOOTING. The current group is display in the lower-left corner. Change groups using ctrl/C.

#### NOTE

The layout for this report is larger than the display screen. For details on the report layout, see the layout report following this section.

#### NOTE

The use of <PAGE> to force page ejects after subtotals.

6. Define Data Output Areas, Step 2.

#### NOTE

The client's name and address are sent over by the client form so they must be named the same way they are in the client form as we have seen in the schedule report.

In this report, the "subtotal report" group is used. The data output areas labeled as "TOTALS" in the layout are actually the subtotal of the appointments with that client. For this reason, we will assign the first sort priority to the name. With PERSONAL PEARL, every time the name changes the subtotal parts of the report are printed.

These two data output areas adjacent to the word "TOTALS" are named TSPENT for total time spent and TFEE for the total fee. Let us look at the definitions for these two areas more closely.

Place the cursor on the area for total time and enter ctrl/B.

(BLANK)	BAKER ENGINEERING SERVICES		
(BLANC)			
@LANK>	INVOICE		
ŒLANK>			
		-	
		_	
DATE	MEMO	- TIME	FEE
(BLANK)			
MVDD/YY .		999.99	99999.99
	TOTALS;	999.99	99999.99
(PAGE>	DATA OUTPUT AREA DEFINIT	100	

The responses in poldface above will control the subtotaling for the time spent. Note the data output area SPENT involved in the computation is defined in the CALENDR form. TSPENT is a new name used only in this report.

The definition of the total fee data area is analogous to the total time area

7 Sort Priority, Optional Step 3.

Enter the sort priority as follows.

\_\_\_\_ SORT PRIORITY \_\_\_\_\_

Enter R below area name to reverse order Press RETURN to continue, ? for HELP, or ESC to EXIT

#### NOTE

The NAME area is the first priority as it is also the controlling information for subtotaining

8. Data From Other Forms, Optional Step 4.

The specifications for sending information from the CLIENT form are the same as those used in the schedule report in the previous section. In addition to using NAME to identify the correct form, the data areas which make up the address are also defined as coming from the CLIENT form.

9 Install Finished Report. Step 5

пся	DING					
<9L	ANK>				_	
ŒL.	ANK>		RING SERVICES			
<b>(BL</b>	ANIO	- " "				
ŒL	ANIO		1			
			2 3 4 _56_			
	NIKO.					
DAT	E	MEMO		TIME	FEE	
<b>GL</b>	ANO					
)ET	AIL		8			_10
20	ют <del>—</del>					
(PA(	GE>		TOTALS:	11		12
1						
REPORT	ORT TYPE: I SEQUENCI ORT CUTPU	E: NAME.ADATE.A	TIME	Į.		
REPO	ORT TYPE:  SEQUENCE  ORT CUTTPU  DATA AREA	LIST E: NAME.ADATE.A' IT AREA ATTRIBUT A NAME: NAME	TIME ES:	Ē		
REPO	ORT TYPE: I SEQUENCE ORT CUTPU DATA AREA 123456789	LIST E: NAME.ADATE.A' TI AREA ATTRIBUT	TIME ES: 45678901234567	Ē		
REP( SORT	ORT TYPE:  SEQUENCE  ORT CUTTPU  DATA AREA  123456789  FORM: <cl< td=""><td>LIST E: NAME.ADATE.A'  TT AREA ATTRIBUT A NAME: NAME  2012345678901234 1 2</td><td>TIME ES: 45678901234567</td><td>•</td><td></td><td></td></cl<>	LIST E: NAME.ADATE.A'  TT AREA ATTRIBUT A NAME: NAME  2012345678901234 1 2	TIME ES: 45678901234567	•		

3 DATA AREA NAME: ADZ

1234567890123456789012345678901234567 1 2 3 FORM: <CLIENT> PRINT/DISPLAY ONLY

4 DATA AREA NAME: CITY

1234567890123456789012345678 1 2 FORM: <CLIENT> PRINT/DISPLAY ONLY

5 DATA AREA NAME: STATE

12

FORM: <CLIENT> PRINT/DISPLAY ONLY

6 DATA AREA NAME: ZIP

99999

12345

FORM: <CLIENT> PRINT/DISPLAY ONLY

7 DATA AREA NAME: ADATE
MM/DD/YY
12345678

8 DATA AREA NAME: AMENOT

12345678901234567890123456789 1 2

9 DATA AREA NAME: SPENT 999.99 123456

10 DATA AREA NAME: FEE 99999.99 12345678

11 DATA AREA NAME: TSPENT
999.99
123456
COMPUTATION: TSPENT+SPENT

12 DATA AREA NAME: TFEE 99999.99 12345678 COMPUTATION: TFEE+FEE

# SECTION 6. MAKING A NEW PRODUCTION DISK



- DEVELOPMENT COPY
- 2. PRODUCTION COPY
- 3. INDEPENDENCE OF DATA FILES
- 4. CONTINUING DEVELOPMENT
- 5. FILE MAINTENANCE

In this section, we will move the newly created client appointment calendar to production status. That is, we will use the PERSONAL PEARL File Maintenance functions to create a Program and Data Disk with new empty data files ready to start capturing and managing I ve information.

After this step in the development of a PERSONAL PEARL program you will have two program disks, a DEVELOPMENT copy and a PRODUCTION copy. The reason for having two copies is to separate the actual use of the program from the development process so both can continue at the same time.

At this point, you can begin using the client appointment calendar to manage information with the production copy while creating additional reports and forms on the development copy. When you decide that the new additions to the development copy are ready to go into production, the file maintenance functions may be used to update the existing production copy, adding the new features you have designed while maintaining at the previously captured the information. We will examine this process of updating an existing production copy in Section 11 of the advanced tutorial chapter.

## INSTRUCTIONS:

## 1. Enter PEARLFM

When the program has been loaded, the Form Directory will be displayed as follows:

FORM	DESCRIPTION
CALENDR	APPOINTMENT CALENDAR
CLIENT	CLIENT INFORMATION
	FORM DIRECTORY  BY OR PREDEFINED FORM NAME: CLIENT_

The procedure for creating a new production disk is repeated for each program unit, in this case, for both the CLIENT program unit and the CALENDR program unit

Remember that a program unit consists of a form and its associated reports.

We will begin with the CLIENT program unit.

When the form name is entered, the file maintenance menu is displayed:

1: FILE SUMMARY DATA

4: CREATE DATA FILE

2: REBUILD INDEX

5: TRANSFER FORM CHANGES

3: COMPACT DATA FILE

6: TRANSFER PROGRAM FILES

- FILE MAINTENANCE MENU —

Form Name: CLIENT

ENTER A SERVICE NUMBER: 4

Press RETURN to continue, ? for HELP, or ESC to EXII

The functions required to create a production copy are 4 and 6, create a new data file and transfer program files.

We start with creating data files. When option 4 is entered, you will be prompted to mount disks. The actual disk drives used in the process are determined during the installation of PERSONAL PEARL and are controlled in the INSTALL.DAT file. In our example, we will use the two drive configuration which has PERSONAL PEARL on drive A and the programs and data files on drive B at runtime.

The following series of prompts will appear.

PLACE DEVELOPMENT MASTER DISKETTE ON DRIVE- A
PLACE DISKETTE FOR NEW DATA FILE ON DRIVE- B

PRESS RETURN TO CONTINUE, OR ESCAPE TO EXIT

USER. Mount the development disk in drive A

(This disk is probably currently in B if you are continuing from

the previous sections.)

USER: Mount the new blank production disk on B and

Type RETURN

At this point, the new data files will be created. When the process is complete, you will be prompted to remount the File Maintenance Disk on A to continue as follows.

Place FILE MAINTENANCE DISKETTE on drive. A Press RETURN to continue

The file maintenance menu will then be displayed.

Next, we will go to function 6, copying program files. When the option is selected, you will be prompted to mount disks as follows:

CREATE/UPDATE PROGRAM DISK FOR CLIENT

OUTPUT (PROGRAM) DISK DRIVE IS B INPUT (DEVELOPMENT) DISK DRIVE IS A OK TO CONTINUE (Y/N) Y

USER: Enter Y

# PLACE CLIENT DEVELOPMENT DISKETTE ON DRIVE: A PRESS RETURN TO CONTINUE, OR ESCAPE TO TERMINATE

USER: Mount development disk on A and

Press RETURN

COPYING PROGRAM FILES FROM DRIVE A TO DRIVE B

PLACE DISKETTE TO COPY PROGRAM FILES TO ON DRIVE: B PRESS RETURN TO CONTINUE, OR ESCAPE TO TERMINATE

USER: Mount the new production disk on B and

Press RETURN

PERSONAL PEARL will begin to copy the program files to the production disk, displaying the following messages.

COPYING: A.CLIENT DIR COPYING: A:CLIENT.L00 COPYING: A:LABELS,M00

COPY PROCESSING COMPLETED, PRESS RETURN TO CONTINUE

USER: Press RETURN

PERSONAL PEARL will prompt you to remount the File Maintenance Disk as follows:

Place FILE MAINTENANCE DISKETTE on drive: A Press RETURN to continue

USER: Mount the File Maintenance Disk on A, then

Mount the development disk on B and

Press RETURN

We are remounting the development disk because the CALENDR program unit still needs to be moved to the production disk.

The file maintenance menu will be displayed:

1: FILE SUMMARY DATA

4: CREATE DATA FILE

2: REBUILD INDEX

5: TRANSFER FORM CHANGES

3: COMPACT DATA FILE

6: TRANSFER PROGRAM FILES

- FILE MAINTENANCE MENU ----

Form Name: CLIENT

ENTER A SERVICE NUMBER:

Press RETURN to continue, ? for HELP, or ESC to EXIT

At this point, we have completed the process for the CLIENT program unit. Next, exit the file maintenance menu with an ESCape, and the Form Directory will be displayed. Select the CALENDR program and return to the file maintenance menu.

Now repeat the process used to move the CLIENT program unit to production on the CALENDR program unit in exactly the same manner. First perform file maintenance function 4 to create data files, then go on to function 6 to move the program files.

When the CALENDR program unit has been processed, the Production Copy is ready for use.

#### SECTION 7. ADVANCED TECHNIQUES FOR ENTERING DATA

MAIN CONCEPTS: 1. GETTING DATA FROM OTHER FILES

2 BROWSING OTHER FORMS

3. DUPLICATING PREVIOUS DATA

In this section, we will look at some powerful data entry techniques to make the capture of information easy and accurate.

We will first look at how to enter data into the CALENDR form in order to access data from the CLIENT form. Next, we will show how to browse through the CLIENT form while entering data into the CALENDR form. And finally, we will demonstrate the 'duplicate previous entry' option.

We assume that you are now familiar with how to move the cursor from data area to data area and with ADDING as opposed to EDITING. Recall that the add mode is entered with the ctrl/B and edit mode is entered with the ctrl/E.

Before continuing with this section, you should enter some clients into the client information form. Since we are using data from the CLIENT form on the CALENDR form, PERSONAL PEARL won't even allow a CALENDAR form to be added to the file without the corresponding client already on file.

For our demonstration, we entered some clients with names starting with T, including THORENSON and THOMAS, as will be seen later.

#### INSTRUCTIONS:

1. Place the ENTER DATA disk in drive A and

Enter: PEARLED

- 2. Select the CALENDR form.
- 3. Select to ENTER DATA, Service 1.

The appointment calender form will be displayed, and initially you will be in the ADD mode. Enter a date and a time. After entering the time, the cursor will move ahead to the name area. The client we wish to enter is THORENSON, We enter the first letter of the name. The form will look like the following:

APPOINTMENT CAL	ENDAR
DATE 6/8/82 TIME 4.4	5 P M
WHO T	
HOME	KORK
TIME SPENT	
TIME RATE	
FEE	
MEMO	
MENO	
	TROL KEY COMMANDS
- Save/replace record	B - Switch ADD/EDIT
- Duplicate last item	Z - Get next record
- Print current record	
- Tab forward	0 - Delete current record
- HELP	ESC - EXIT
ADD	

We press RETURN and PERSONAL PEARL will go to the client form for someone named "T", won't find anyone with that name, but will have positioned for access at the start of the T's in the client form file.

To indicate that no T client could be found, the data areas which were to be brought over from the client form are filled in with stars as shown below. The message RECORD NOT FOUND will also be displayed in the menu.

APPOINTMENT CA	LENDAR	
DATE 6/8/82 TIME 4.4	5 P M	
WHO T		
######################################	*********	
HOME ************************************	RK *******	
TIME SPENT		
TIME RATE		
-		
FEE		
MEMO		
MEMO		
	ROL KEY COMMANDS	
U - Save/replace record		
N - Duplicate last item		
P - Print current record	W - Get previous record	
I - Tab forward	0 - Delete current record	
Q - HELP	ESC - EXIT	
ADD	RECORD NOT FOUND	

Now comes the interesting part By entering a ctrl/Z, we can step forward in the client form to the next name after "F". This client form will send information to the CALENDR form we are adding. We see below that the client THOMAS was sent over.

APPOINTMENT CA	LENDAR ——————
DATE 6/8/82 TIME 4.4	5 P M
WHO THOMAS, O. EDWARD.	
CUSTOM HOME AND LA	WDSCAPE
	IORK 503/555-4432
TIME SPENT	
TIME RATE	
FEE	
50	
MEMO	
ENTER DATA _ CONT	TROL KEY COMMANDS
U - Save/replace record	
N - Duplicate last item	
P - Print current record	N = Cet previous record
I - Tab forward	0 - Delete current record
Q - HELP	ESC - EXIT
ANN	

Note we are entering an appointment for THORENSON, not THOMAS. Move the cursor back to the name area. Next enter another ctr./Z (Z for next) and the next client after THOMAS will be displayed.

This process may be repeated to move ahead to the desired name, as shown below

APPOINTMENT C	ALENDAR —
DATE 6/8/82 TIME 4.	45 P M
WHO THORENSON, D. M.	
WORKSHOP/GARAGE A	DDITION
HOME 509/555~6587	WORK 509/555-2254
TIME SPENT	
TIME RATE	
FEE	
MANO	
MENO	
	TROL KEY COMMANDS
U - Save/replace record	
N - Duplicate last item	
u populate fast ifem	z - set next record
P - Print current record	
I - Tab forward	0 - Delete current record
Q - HELP	ESC - EXIT
ADD	

The ctrl/W command works just like the ctrl/Z except that you move backwards through the other form; in this case, in decending order by name. You should browse forward and backward through the client forms to get the feel. When you get to the first record or the last record and try to move one more step, PERSONAL PEARL will respond with an "RECORD NOT FOUND" message.

We can also jump from place to place in the client file by entering the first few letters of the name and again doing a ctrl/Z or ctrl/W. We can usually locate a client's name by entering just the first few letters.

### **Duplicating Data**

Often when entering information into a form, the information for a particular area will be the same, or nearly the same, as the previous form entered or accessed. An example is the city and state areas in the cient form. When entering data into an area which is the same as the previous form, type a ctrl/N to duplicate the information on the previous form. This can be useful even when the information is not exactly the same, as with zip codes, which usually have the same first 3 digits in a city. You can duplicate the previous entry and just retype the last two digits.

## Printing Forms



Note the  $\mbox{ctrl/P}$  option on the menu. This option will print the form as displayed on the screen to the printer.

#### SECTION 8. PRODUCE LABELS

## MAIN CONCEPT: GENERATING MULTI-UP FORM REPORTS

In this section, we will use the produce reports service to generate multi-column mailing labels. You can set the output to match almost any kind of label stock, as long as a single label is large enough to hold the form as designed.

#### **INSTRUCTIONS:**

- 1. Select the CLIENT program from the Form Directory.
- 2. Select Produce Reports, Service 2.
- 3. Select the LABELS report from the Report Directory.

The produce reports menu will be displayed as follows:

Optional Step 1: SELECTION VALUES

Optional Step 2: PRINTOUT DETAILS

Step 3: FINAL REPORT

\_\_\_\_ PRODUCE REPORTS .

Form Name: CLIENT Report Name: LABELS

ENTER A STEP NUMBER: 2

Press RETURN to continue, ? for HELP, or ESC to EXIT

We intend to produce a label for all the clients so we don't need to set any selection values. We will go directly to Step 2, Printout Details.

Select the PRINTOUT DETAILS option and the following menu will be displayed:

TITLE:	
NUMBER OF REPORT LINES PER	PAGE 4_
TOTAL LINES PER PAGE	<pre>8_ (0 = Use form feed)</pre>
FILE NAME FOR REPORT	
	= Printer, CON: = Console)
MULTIPLE FORMS ON ONE PAGE:	(FIXED reports only)
NUMBER OF FORMS ACROSS: 2	
	(Columns)
POTATOL	T DETAILS
	Report Name: LABELS
Form Name: CLIENT	Report Haire: Lineage
You may make changes by ty	ping a new value.
Press RETURN to continue,	? for HELP, or ESC to EXIT

The title is not used in generating labels so we leave it blank. The number of report lines is the number of lines which were defined on the report, in this case 4' one for the name, two for the address, and one more for city state and zip.

The number of lines per page is the number of lines from the top of one label to the top of the next label. In our case, the labels are 8 lines from top to top.

We have left the file name blank to indicate that output is to go to the printer

The next two questions define the multi-up part of the process. We specify that the label stock is two labels wide, and that it is 40 print columns from the left edge of one label to the left edge of the next label.

When we finish entering the printout details the produce reports menu is displayed.

Go on to Final Report, Step 3.

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Processing is automatic from here except for mounting the sort disk and remounting the produce reports disk, depending on your conf.guration. While the sort is in progress, the following message will be displayed:

PERSONAL PEARL SORT, Ver 1.00

After the sort is complete, you may be asked to mount the produce reports disk. The report is then loaded and printing begins.

## SECTION 9. PRODUCE SCHEDULE REPORT



MAIN CONCEPTS: 1. SELECTION RANGES

2. CONSOLE OUTPUT

In this section, we will produce the appointment schedule report using the console for output and selecting a particular date range.

#### INSTRUCTIONS:

- 1. Select the CALENDR form from the Form Directory.
- 2. Select the Produce Reports, Service 2.
- 3. Select the SCHEDUL report from the Report Directory.

The produce reports menu will then be displayed as follows:

Optional Step 1: SELECTION VALUES

Optional Step 2: PRINTOUT DETAILS

Step 3: FINAL REPORT

\_ PRODUCE REPORTS \_

Form Name : CALENDR Re

Report Name: SCHEDUL

ENTER A STEP NUMBER: 1

Press RETURN to continue, ? for HELP, or ESC to EXIT

Select Step 1 to set the selection values. A blank appointment calendar form will be displayed as follows.

APPOINTMENT CALENDAR	
DATE 6/1/82 TIME M	
жю	
HOMEBORK	
TIME SPENT	
FEE	
MENO	
MENO	

EDITS COMPLETE? (Y/N)
ENTER LOW SELECTION VALUES

Note the message EDiTS COMPLETE? (Y/N) appears after you have selected the desired values and pressed RETURN.

We have entered the date June first as the low date for the report and have set no other selection criteria. Note that we could set a time to get only morning appointments and so on.

After the low selection values are entered the form is cleared, and we are prompted for nigh selection values.

	12 TIME M	
	WORK	
TIME SPENT	·	
TIME RATE		
FEE		

EDITS COMPLETE (Y/N)
ENTER HIGH SELECTION VALUES

We have entered June 8 as shown above. This completes the selection values for our report. The result is that only the appointments scheduled for the period June 1 to June 8 will appear on the report.

Upon exiting the selection menu, the produce reports menu returns and we will go on to Step 2, Printout Details. The printout details menu will be displayed as follows:

We show your responses in boldface.

TITLE: APPOINTMENT SCHEDULE FOR THE WEEK

NUMBER OF REPORT LINES PER PAGE 20\_

TOTAL LINES PER PAGE

(0 = Use form feed)

24\_

MULTIPLE FORMS ON ONE PAGE: (FIXED reports only)
NUMBER OF FORMS ACROSS: NA SINGLE FORM WIDTH: NA\_
(Columns)

PRINTOUT DETAILS \_\_\_\_\_\_
Form Name: CALENDR Report Name: SCHEDUL

You may make changes by typing a new value.

Press RETURN to continue, ? for HELP, or ESC to EXIT

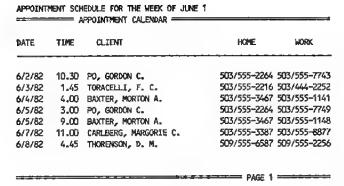
Note that in the printout details we have specified the console for output. The console here has 24 lines and we have elected to display the report on only 20 of the 24 lines. We did this to leave room at the bottom for PERSONAL PEARL to display messages like PRINTING and press return. When outputting the report to the console, PERSONAL PEARL will pause at the end of each page for a return.

Upon exiting from the printout details menu, the produce reports menu is displayed. Select Step 3 to produce the report.

PERSONAL PEARL will go out and sort the data file, displaying the following message:

PERSONAL PEARL SORT, Ver 1.00

When the sort is complete, the report w'll be displayed on the screen as follows. Note that the content of the report depends on the data you have entered. If you have not entered any data in the date range entered in the selection values menu, then none will appear on the report.



The title appears on line one. PERSONAL PEARL will pause after the first screen for a return before going on to the next screen of the report.

### SECTION 10. PRODUCE INVOICES

#### MAIN CONCEPTS: SELECTION RANGE

In this section, we will produce invoice reports. This is another report which makes careful use of sorting and selection to yield the desired result. In our example, we sort the information into date order within name order. Then, when the report is produced, we select only the appointments which fall in the billing period. When the name changes as the report is produced, that is the signal for the subtotal to be printed. After printing the subtotal, the report goes to the top of the next page and prints the heading for the next invoice.

#### INSTRUCTIONS:

- 1. Select the CALENDR form from the Form Directory.
- 2. Select the Produce Reports, Service 2.
- 3. Select the INVOICE report from the Report Directory.

The produce reports menu will be displayed as follows:

Optional Step 1: SELECTION VALUES

Optional Step 2: PRINTOUT DETAILS

Step 3: FINAL REPORT

PRODUCE REPORTS \_\_\_\_\_\_\_
DR Report Name: INVOICE

Form Name: CALENDR Repor

ENTER A STEP NUMBER: 1

Press RETURN to continue, ? for HELP, or ESC to EXIT

We select option one, Selection Values, and the following menu a displayed:

APPOINTMENT CALENDAR
DATE 6/1/82 TIME M
MHO
HOME HORK
TIME SPENT
FEE
MEMO
MBM)

EDITS COMPLETE (Y/N)? ENTER LOW SELECTION VALUES

We have entered the first of June as the starting date for the report. Similarly we will set the ending date in the next screen to the last day of June, thus defining our billing period as the month of June.

These selection values will cause an invoice to be printed for every client who had an appointment during June. We could send invoices to only those clients who had billable appointments by setting the low selection range on "Fee" to one cent, for example. This would cause non-billable appointments to be omitted.

Upon exit from the selection values menu, the Produce Reports menu will be displayed. Select Step 2, Printout Details and the following menu will be displayed:

TITLE:	
NUMBER OF REPORT LINES PER	PAGE 55_
TOTAL LINES PER PAGE  FILE NAME FOR REPORT	O_ (O = Use form feed)
PRINTOUT	DETAILS
Form Name: CALENDR	Report Name: INVOICE
You may make changes by typ	oing a new value.
Press RETURN to continue, ?	for HELP, or ESC to EXIT

We show your responses in boldface above.

The printout details shown above will print 55 lines per page and use the form feed to advance to the next page. No titte is used.

Now we are ready to return to the Produce Reports menu and select the Final Report, Step 3. PERSONAL PEARL will sort the data and the report result will look something like this:

#### BAKER ENGINEERING SERVICE

#### INVOICE

DATE	MEMO		TIME	FEE
6/4/82 6/5/82	CONSULTATION WITH CONTRACT SIGNING	CONTRACTOR	1.00 0.50	25.00 12.50
BAXTER, 33 HOLL	MORTON A.	TOTALS:	1.50	37.50
PORTLANI	0	OR 97332		

## SECTION 11. UPDATING PRODUCTION DISKS WITH PROGRAM CHANGES



MAIN CONCEPTS: 1 PROGRAM CHANGES

2 FORM INSTALLATION

3. REPORT INSTALLATION

4 FILE MAINTENANCE

5 INDEX CHANGES

In this section, we will make some changes to the client appointment program and apply them to a production disk which has already captured some live data. The information which is arready on file is preserved and the new program revisions will apply to both the old data and to new data entered after the changes.

The change which we make is to add a "discount rate" data input area to the CLIENT form which is then used in the fee computation on the CALENDR form Both forms will have one new data input area and the CALENDR form will also have a change to the computation for fee.



#### **INSTRUCTIONS**

- 1 Mount the form development disk
- 2. Load the PEARLDF Design Forms program
- 3. Select the CLIENT form from the Form Directory.

## PROGRAM CHANGES

- 4. Select the Design Forms, Service 1
- 5. Select Form Layout, Step 1

At this point, we will lay out an additional data input area to the form labeled discount rate. Refer to the following layout report for the details on defining the data input area.

Return to the Design Forms menu.

6. Select Data input Areas, Step 2.

Move the cursor to the new discount rate area and type ctrl/B. Using the details in the layout report, define the new data area.

Return to the Design Forms menu.

#### FORM INSTALLATION

7. Select Form Installation, Step 5.

When the form is installed, return to the Form Directory and select the CALENDR form.

8. Select the Design Forms, Service 1.

Perform Steps 1 and 2 of Design Forms to add the new data area DRATE, the discount rate we just added to the CL.ENT form, to the CALENDR form.

Next, change the computation of FEE to use the new discount rate by changing the computation to:

#### ((100-DRATE)/100)\*SPENT\*RATE

Return to the Design Forms menu.

9. Select Data From Other Forms, Step 4.

Move the cursor to the DRATE area and enter a ctrl/B. Next set the form for accessing DRATE to client. This area will not be used to find the other form, and will be brought over for display only.

Return to the Design Forms menu.

10. Install the modified CALENDR form.

## REPORT INSTALLATION

 Go to the Design Reports menu for each of the reports previously defined in the system and perform Step 5, Install Finished Report. Reinstail LABELS, SCHEDUL and INVOICE.

## FILE MAINTENANCE

12. Load the file maintenance program, PEARLFM.

At this point, we begin the file maintenance operations necessary to update the production disk with the revisions to the development disk which we have made in the first 11 steps above.

When the file maintenance program has loaded, the Form Directory will be displayed. Select the client form and the file maintenance menu will be displayed.

To update an existing production disk with changes, we need to perform functions 5 and 6 on each program unit, in this case on both CLIENT and

CALENDR program units. We begin by doing 5, then 6 on the CLIENT program unit. Then, we go on to 5 and 6 on the CALENDR program unit.

1: FILE SUMMARY DATA 4: CREATE DATA FILES

2: REBUILD INDEX 5: TRANSFER FORM CHANGES

3: COMPACT DATA FILE 6: TRANSFER PROGRAM FILES

FILE MAINTENANCE MENU

Form Name: CLIENT

ENTER A SERVICE NUMBER: 5

Press RETURN to continue, ? for HELP, or ESC to EXIT

When we select option 5, the following prompts for disk mounting will appear:

PLACE DEVELOPMENT MASTER DISKETTE ON DRIVE- A PLACE DISKETTE WITH DATA FILE TO BE UPDATED ON DRIVE- B

PRESS RETURN TO CONT.NUE, OR ESCAPE TO EXIT

USER: Mount development disk on A and

Mount the production disk on B, then

Press RETURN

When the process is complete, we are prompted to remount the File Maintenance disk on drive A as follows:

Place FILE MAINTENANCE DISKETTE on drive: A Press RETURN to continue

When the disk has been mounted, the file maintenance program will be loaded and the maintenance menu will be displayed. Select option 6 to transfer program files.

We are then given the following series of prompts to mount disks:

CREATE/UPDATE PROGRAM DISK FOR CLIENT

OUTPUT (PROGRAM) DISK DRIVE IS B INPUT (DEVELOPMENT) DISK DRIVE IS A OK TO CONTINUE (Y/N) Y

PLACE CLIENT DEVELOPMENT DISKETTE ON DR VE: A PRESS RETURN TO CONTINUE, OR ESCAPE TO TERMINATE

USER: Mount development disk on A and

Press RETURN

COPYING PROGRAM FILES FROM DRIVE A TO DRIVE B

PLACE DISKETTE TO COPY PROGRAM FILES TO ON DRIVE B PRESS RETURN TO CONTINUE, OR ESCAPE TO TERMINATE

USER: Mount production disk on B and

Press RETURN

While the program files are being transferred, the following messages will be displayed:

COPYING: A:CLIENT.DIR COPYING: A:CLIENT.L00 COPYING: A:LABELS.M00

COPY PROCESSING COMPLETED, PRESS RETURN TO CONTINUE

When the process is complete, we are prompted to remount the File Maintenance disk as follows:

Place FILE MAINTENANCE DISKETTE on drive: A Press RETURN to continue

At this point, we have completed the updates for the CLIENT program unit. We then repeat the process for the CALENDR program unit. Escape from the maintenance menu to return to the Form Directory. Select the CALENDR form. The maintenance menu will be displayed. Perform function 5, then function 6.

When these operations are complete, the production disk will have the changes we made to the development disk.

#### INDEX CHANGES

The changes we made in steps 1 through 11 do not affect the index for either program unit. However, if we had added a data input area which was defined as an index, or redefined an existing data input area as an index, or deleted an index, one more file maintenance process would have been required.

When updating a production disk with any changes involving an index, it is necessary to perform File Maintenance function 2 to rebuild the index. This option would be performed last, after all the other operations were complete for both the CLIENT and CALENDR program units.

The layout reports which follow detail the changes to the forms which were made during this section.

FORM LAYOUT (PAGE 1) FOR CLIENT	
CLIENT INFORMATION FORM	
NAME	1
ADDRESS	2
ADDRESS	3
CITY A STATE _5 ZIP .	6
WORK PHONE	8
PROJECT	
DISCOUNT RATE10 %	
INPLIT AREA ATTRIBUTES:	

At this point, we have completed the updates for the CLIENT program unit. We then repeat the process for the CALENDR program unit. Escape from the maintenance menu to return to the Form Directory. Select the CALENDR form. The maintenance menu will be displayed. Perform function 5, then function 6.

When these operations are complete, the production disk will have the changes we made to the development disk.

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When updating a production disk with any changes involving an index it is necessary to perform File Maintenance function 2 to rebuild the index. This option would be performed last, after all the other operations were complete for both the CLIENT and CALENDR program units.

The layout reports which follow detail the changes to the forms-which were made during this section.

FORM LAYOUT (PAGE 1) FOR CLIENT	
CLIENT INFORMATION FORM	
NAME1	
ADDRESS2	
ADDRESS3	
CITY \$ STATE _5 ZIP6	
WORK PHONE	
PROJECT	
DISCOUNT RATE1'	
ATTOYOUTE	

7 DATA AREA NAME: NAME DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890123 2 3 4

REQUIRED DATA

DATA AREA IS UNIQUE INDEX

2 DATA AREA NAME: AD1 DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890 2 1

3 DATA AREA NAME: ADZ DATA AREA TYPE: CHARACTER

1234567890123456789012345678901234567890

4 DATA AREA NAME: CITY DATA AREA TYPE: CHARACTER

> 123456789012345678901234 1

5 DATA AREA NAME: STATE DATA AREA TYPE: CHARACTER

12

6 DATA AREA NAME: ZIP DATA AREA TYPE: NUMBER 99999 12345

7 DATA AREA NAME: WKPHONE DATA AREA TYPE: CHARACTER

> 123456789012 1

8 DATA AREA NAME: HMPHONE DATA AREA TYPE: CHARACTER

1234567890123

9 DATA AREA NAME: PROJECT DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890 1 2 3

10 DATA AREA NAME: DRATE DATA AREA TYPE: NUMBER 99**.**99 12345

REGUIRED DATA

FORM LAYOUT (PAGE 1) FOR CALENDR APPOINTMENT CALENDAR === DATE \_\_\_\_\_\_1 TIME \_\_\_\_2 3 M HOME \_\_\_\_\_\_6 WORK ... TIME SPENT \_\_\_\_\_8
TIME RATE \_\_\_\_9 DISCOUNT RATE \_\_\_10 % FEE \_\_\_\_\_11 MEMO \_\_\_\_\_ \_\_\_\_12

1 DATA AREA NAME: ADATE DATA AREA TYPE: DATE MM/DD/YY 12345678 REQUIRED DATA DATA AREA IS NON UNIQUE INDEX

INPUT AREA ATTRIBUTES:

2 DATA AREA NAME: ATIME DATA AREA TYPE: NUMBER 99.99 12345 REQUIRED DATA

3 DATA AREA NAME: AMPM DATA AREA TYPE: CHARACTER

> T 1 Regulareo onta

4 DATA AREA NAME: NAME DATA AREA TYPE: CHARACTER

> 1234567890123456789012345678901234567890 1 2 3 4 5 REQUIRED DATA DATA AREA IS NON UNIQUE INDEX FORM: <CLIENT> ACCESS KEY

5 DATA AREA NAME: PROJECT DATA AREA TYPE: CHARACTER

6 DATA AREA NAME: HMPHONE DATA AREA TYPE: CHARACTER

1234567890123456

FORM: <CLIENT> DISPLAY ONLY

7 DATA AREA NAME: WKPHONE DATA AREA TYPE: CHARACTER

1724567890172456769

FORM: <CLIENT> DISPLAY ONLY

8 DATA AREA NAME: SPENT DATA AREA TYPE: NUMBER 9999,99 1234567

9 DATA AREA NAME: RATE DATA AREA TYPE: NUMBER 9999.99 1234567 10 DATA AREA NAME: DRATE DATA AREA TYPE: NUMBER

12345

FORM: <CLIENT> DISPLAY ONLY

11 DATA AREA NAME: FEE DATA AREA TYPE: NUMBER 9999\_99 1E4557

COMPUTATION: ((100-brate)/100)\*SPENT\*RATE

12 DATA AREA TYPE: CHARACTER

1234567890123456789012345678901234567890 2 3 4 5

13 DATA AREA NAME: AMEMO2 DATA AREA TYPE: CHARACTER

> 12345678901234567890123456789012345678901234567890 2 1

		•	
		•	

## Chapter 2

## Glossary

#### CONCEPTS AS TOOLS

CONTACT KEY

(PATH KEY) This key is the link between the sending form and the receiving form. It is created when a "Y" response is given to the query "DOES DATA IN THIS AREA IDENTIFY RECORDS FROM ANOTHER FORM?" This query appears on both DESIGN FORMS and DESIGN REPORTS, in Optional Step 4 in both cases.

EXTERNAL FORM This form must be a data entry form and not a report. This is also referred to as a "sending" form.

INDEX

This term is used to describe a DATA AREA that will be used as a reference for a form. PERSONAL PEARL requires that at least one INDEXED DATA AREA be defined for a FORM. If you do not define an INDEXED AREA for the FORM you are creating, then PERSONAL PEARL will automatically assign the first DATA AREA on your form as an INDEX.

An analogy would be the title of a book and the book itself. The title of the book is the index to the book when you go to the library and look up the name of the book in the TiTLE !NDEX system.

LAYOUT REPORTS

Layout reports are reports printed out from your screen for purposes of design review and proofing. These reports are obtained using the ctrl/P function for output to printer. They are an integral part of understanding the design process and are necessary to understand the advanced tutorial. A full description of how they are created and what they contain are included in Chapter 4, Design Aids, Reference

Manual.

PATH A term used to associate two or more forms as transferring

information.

Information is transferred in one direction, that is, you can have one form send information (an external form), and

another form receive information (a receiving form).

PATH DATA

These are data areas that are used to transfer data from one form to another. A receiving form must have at least

one data area defined with the name of the sending form (see DATA FROM OTHER FORMS). Path data areas must

have the following qualities:

PATH INDEX This is a indexed data area An indexed data area is

required to link a sending form record with a receiving form record. A receiving form must have only one indexed data area (path index) for each sending form it uses. The

sending form must have the same path index.

PATH NAME This is a data area name. Data that is to be sent from one

data area on a sending form to another data area on a

receiving form must have the same path names.

RECEIVING This form may be a data entry form or a report. This form FORM must be installed after the sending form has been installed.

REPORT TYPE Reports are available from PERSONAL PEARL in three

types, according to user choice. FIXED-type reports provide a form on each separate page. LIST-type reports summarize data from the input forms into one report. Spreadsheet-type reports allow report information to inter-

face with SuperCalc Version 1.07 or later.

SENDING FORM Also known as the "external" form or the "other" form.

SELECTION This term refers to the capability to specify a range (a VALUES defined limit) for data you want to print out. High and Low

defined (imit) for data you want to print out. High and Low values may be specified, allowing values between and

including these limits to be printed.

SORT PRIORITY Before information is printed out in a report, you may sort

the information in your files if you wish. Sort priorities may be set for a maximum of five items. Sorts may be requested

in ascending or descending order.

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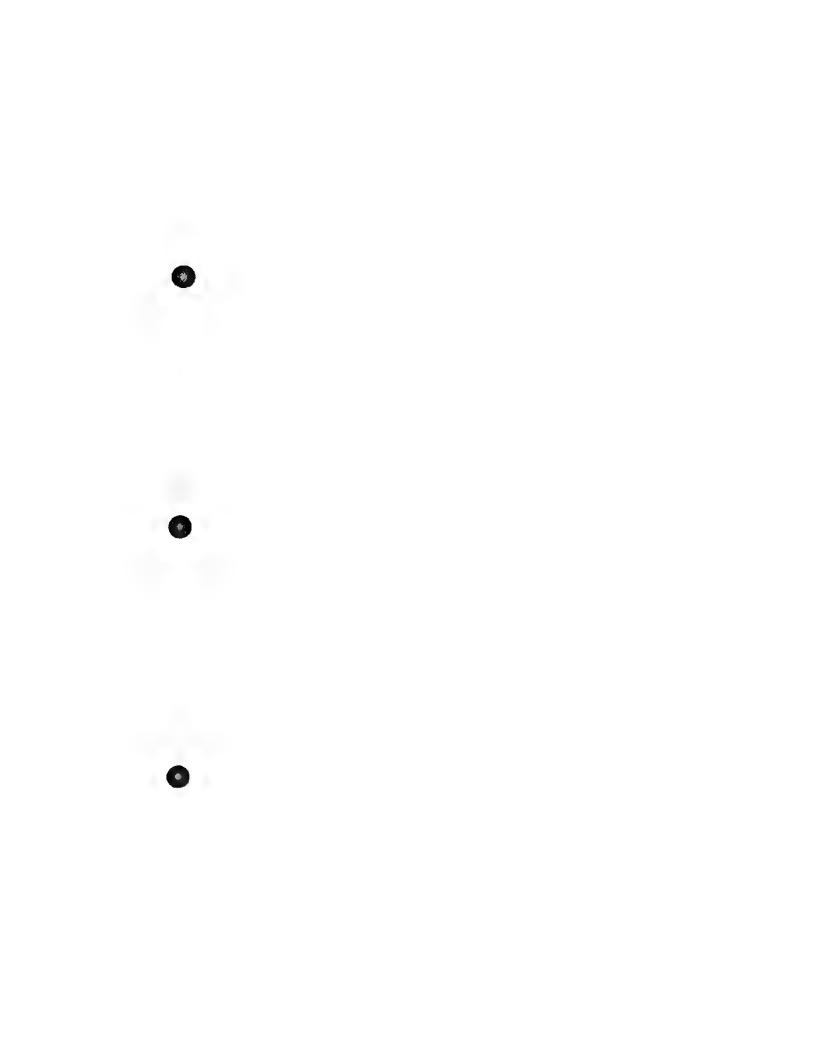
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# reference manual

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An INFO BASE System ™

## reference manual

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OSBORNE COMPUTER CORPORATION Hayward, California

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## **ACKNOWLEDGEMENT**

PEARLSOFT would like to thank the following for their assistance, suggestions and guidance in writing the PERSONAL PEARL publications:

- 1. The Technical and Publications staff of Osborne Computer Corporation.
- SoftStat Systems of Salem, Oregon.
- 3. Bill McLain of Portland, Oregon.
- Numerous individuals who worked with us during the PERSONAL PEARL beta-test release period.

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# Chapter 1

## Overview

This reference manual contains the detailed specification of PERSONAL PEARL. We have structured this manual to help you find the detailed information you need about PERSONAL PEARL.

Chapter 2

Contains detailed reference material that you need to know as you become more familiar with PERSONAL PEARL. Rely on it when you need detailed specification on the functions of PERSONAL PEARL.

Chapter 3

Provides a detailed took at some of the more powerful features of PERSONAL PEARL. The first feature is multiple file processing through which you may reference information that has been stored on other forms. The second feature covers information on computations. Computations can be entered into forms and reports and can make direct use of information stored on other forms. The third feature covers multiple record types and control information wherein information in several formats reside in the same file. The fourth feature discussed is directory maintenance. Finalty cursor positioning is covered along with some special command functions that can be used in respect to the cursor.

Chapter 4

Explains design aids to be used when laying out reports or forms. These aids are obtained using the CP/M ctrl/P command during the design process. The different form or report design steps you used and your design specifications are snown in the layout reports.

Chapter 5

Deals with the file maintenance facilities of PERSONAL PEARL, i.e., PEARLFM. This set of utilities is no less important than the others, but is not needed until you have something to maintain. The reason you need these advanced facilities will

become apparent once you have understood and gained more knowledge of PERSONAL PEARL. This chapter provides instructions about file maintenance.

Chapter 6 Provides a summary rev.ew of some of the CP/M file

maintenance utilities you are most likely to use for any software package using CP/M. The CP/M file maintenance commands are not covered in detail. We feel that in-depth understanding of CP/M is most appropriately covered in your CP/M user's manual and those manuals which come with

your computer.

Chapter 7 This chapter is for programmers and contains a discussion

and an example of how data from PERSONAL PEARL data files may be processed by programs written in BAS<sub>4</sub>C.

Contains a discussion of the security and privacy features of Chapter 8

PERSONAL PEARL

Briefly, the appendices contain those special items of information that may be used most frequently, and where ease of access is important.

Appendix A, B Contain information about special messages you may receive

from PERSONAL PEARL. An explanation of what happened, the reasons and the actions you may need to take are

included.

Appendix C Covers the details concerning the installation codes in

INSTALL.DAT.

Appendix D Covers the different ways that your PERSONAL PEARL disks

can be set up (what files on what disks) for your final daily production use. Useful combinations of files are suggested.

Appendix E Contains a full and general explanation of file maintenance

using PEARLFM. Although it is not more detailed than Chapter 5, it does explain what happens during file maintenance in a

different manner,

Appendix F Gives a detailed account of the control key commands from

the various CONTROL KEY COMMAND lists. It is a back-up for and documentation of the display screens and HELP texts. Appendix G Contains a file of the HELP text that is provided with PERSONAL PEARL "on-line". It is provided for those users who do not wish to maintain the help text on disk because of

space requirements.

Appendix H Gives a detailed look at interfacing SuperCafe with

PERSONAL PEARL.

# Chapter 2

# General Reference

#### INTRODUCTION

The information contained in the general reference sections of this manual is intended to clarify some points already addressed in the User's Guides, and to provide additional explanations for the specific functional areas of PERSONAL PEARL.

Just as the tutorials took you through step-by-step, first laying out the form, then the report, then entering data and finally, producing reports, this general reference section takes you through additional detail you may need in order to accomplish specific types of processing Each section provides a brief summary of specific actions involved, plus any additional specific steps which may be optional.

This manual was written to expand the knowledge you gained from the User's Guides as well as to be used as a reference manual during creation of your own personal information systems.

## **DESIGN FORMS**

### FORM DIRECTORY

Before designing a form, it must present on the PERSONAL PEARL Form Directory. You may enter the name of a predefined FORM (which appears in the Form Directory), or you may create a new NAME using up to seven characters and giving the form a DESCRIPTION.

You will be prompted to enter:

NAME

The form name may be from one to seven characters long. This is the name of your form. This name will also be the name of a family of disk files with different file types associated with the form.

Example: ADDRESS

DESCRIPTION The FORM DESCRIPTION is provided as an aid to

you later on when you select a FORM from the Form Directory. You provide the DESCRIPTION when you add a new FORM. The description may fill up the line provided on the screen when the prompt is displayed.

Example: MY ADDRESS BOOK

**MESSAGES** 

ADDED This message tells you that the name you have entered has been added to the Form Directory. Press

RETURN to continue with the FORM you have added

RETURN to continue with the FORM you have added (wherein the message changes to SELECTED), or

enter a different name.

OK TO DELETE (Y/N)

You may delete a form name by entering the name and then pressing ctri/O.

and then pressing clin/O.

If you wish to continue the delete, you enter a "Y". If you decide you do not wish to delete the form name, you press "N".

NOTE

Deleting a name from the Form Directory does not delete any files on disk that may be associated with that name, in other words, if you have designed a form (such as ADDRESS) and you delete the name ADDRESS from the Form Directory, your address files will still be on disk. (See Appendix D for a description of program files.) You must "ERAse" them from disk using your CP/M erase command if you no longer need them.

ERA B:ADDRESS.\*

The above action would erase all the files created by the previous tutorial on ADDRESS. If you have not erased your files from disk, but you have deleted the name from the directory, you cannot access the form files again unless you put the name back in the Form Directory. For more on PERSONAL PEARL directories see the section on directory

maintenence.

NAME NOT LOCATED

This message tells you that the FORM name you have entered is not in your Form Directory. You must either enter a name already in the Form Directory, enter a new name to ADD, or press ESCAPE to end processing.

# STEPS FOR FORM CREATION



Five steps are involved in designing a new form. If you are designing a new form, select step 1 and then select each of the subsequent steps until the form is installed (steps 3 and 4 are optional). You may return to any step to make additional changes. A data area must appear in the layout before it may be defined in step 2. Likewise a data area must be defined in step 2 before it may be referred to in steps 3 and 4.

## Step 1: FORM LAYOUT

To LAY OUT a FORM, enter the form layout similar to the way you would lay out a FORM on a piece of paper in a typewriter. The areas into which data will be entered can be specified by using underscores ("\_" character). For numeric data, you may use underscores for integers without punctuation, or you may fully format numeric areas using 9's for digit locations and the dollar, comma, period and minus signs for punctuation.

NAME: \_\_\_\_\_\_ AGE: 99 SALARY: \$999,999.99



BIRTHDATE: mm/dd/yy

# SYMBOLS USED FOR FORMATTING NUMERIC AREAS

Symbol Description

- 9 for a digit position.
- \$ in the first position will set a fixed dollar sign.
- \$\$ in the first two positions will set a floating dollar sign.
- in the last position sets a trailing minus sign. The default is a leading minus sign.
- a single period sets the decimal place.
- , commas may be used to group digits in the usua way.

PERSONAL PEARL treats all numeric data areas with sixteen digits of precision. You may have sixteen digits of precision to the right or left of the decimal point, or somewhere in between



#### FORMATTING DATE AREAS

It is good practice to format date areas as shown in the BIRTHDATE example above. However, any eight character string may be used, for example, eight underscores.

# PRINTING FORM/REPORT LAYOUTS

You can also produce a printed report of all the definitions you have made by entering a ctrl/P (see Chapter 4). The report is produced on your printer and includes the definitions made in this step and the three steps following (i.e., data input areas, index for finding records and data from other forms).

# Step 2: DATA INPUT AREAS

Your next step is to distinguish more clearly areas into which information will be input from areas which are background text on the screen. This is done by giving each data input area a name, a type and specifying whether the input of data is mandatory or not.

You do this by simply moving the cursor to the first character of the data input area and pressing the ctrl/B combination. The data input area will then be highlighted, and you will be prompted to answer the following questions:

NAME THE DATA INPUT AREA HERE

Enter a one to seven character name that can be referenced later on when you design reports and other forms. For example: "NAME", "ADDRESS', "PHONE", "AMOUNT", "TOTAL", "CUST", "CUST2", and so on.

#### NOTE

If you intend to use this input area name in a computation, then it must start with a non-numeric character (see also Chapter 3 and Appendix A).

IS INPUT REQUIRED? Decide whether the data in this area is always required and therefore must be entered in order to complete information on the form:

Enter "Y" to prevent entry operator from leaving this area blank.

Enter "N" if data entry is not always required.

#### TYPE OF INPUT



Choose whether the data area will be characters (may be textual or numeric), numbers (for computations or numbers that you want aligned to the right of the column, or date for dates:

The "C" option allows either characters or numbers to be entered.

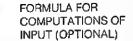
The "N" option says that the data input area is numeric and so may be used in calculations.

The 'D" option says the data input must be a date.

#### NOTE

You cannot change a data input area TYPE once you have defined an input area as either "C", "N", or "D", and have then installed the form and finally, entered data into the form.

If you need to change a previously defined data input area TYPE, you will need to rename the input area and to re-enter any data that you had stored in the form before the change occurred (See Appendix A.)



If the data area 's to a computer numeric area, then enter a formula for a computation:

A FORMULA may be entered to compute a numeric data input area based on other areas in your form. You may use "+" to add values; "-" to subtract values; "\*" to multiply two values together; and "/" to divide one value into another.

You may also use parentheses to show the order in which a computation is to occur. For example:

(A+B) \* C means to add A and B, then multiply the total times C.

If no parentheses are used, multiplications and divisions will occur before additions and subtractions. (See Appendix A and Chapter 3.)

## Optional Step 3: INDEX FOR FINDING RECORDS

Index areas are used to select data forms (or records) that have been added to the program data file. In this way, you can find and identify individual records, index areas are also used to create a "path" index for access from other forms. Any data area may be used as an index, and several indexes may be defined. To define an index area, position the cursor to the beginning of the data input area containing data you want to use as an index. Then press the ctrl/B combination. Once you have done this, you will be prompted to enter the options associated with an indexed area. Examples of commonly selected indexed categories are names and I.D. numbers.

This step is optional. You do not have to make any area an indexed area. It is recommended that at least one data input area be selected as an indexed area. If no indexed areas are specified during the design of a form, the first data input area on the screen will automatically be assigned as an indexed area.

Designating an input area as indexed allows the input area to be used as a path or link to the form when accessing it from other form. (see discussion on DATA FROM OTHER FORMS in this section).

If you do not remember which data input areas are "indexed" areas, you may enter a ctrl/P to highlight those input areas on your form which have already been specified as indexed areas.

The following prompts are displayed when Step 3 is selected:

WILL YOU USE THIS AREA TO IDENTIFY AND FIND INDIVIDUAL RECORDS? (Y/N) Enter "Y" to designate that the input area is to be an indexed area, or "N" to designate the area as not indexed.

If you answer Y to the above question, then answer the next question, otherwise you may ESCAPE or RETURN.

WILL DATA IN THIS AREA UNIQUELY IDENTIFY ONE RECORD IN THIS FILE? (Y/N) Enter "Y" to show that there is one and only one corresponding record for each data entry placed in this indexed data input area.

Enter "N" to show there may be duplicate names or numbers entered in this indexed data input area.

For example:

On a customer master file, you would probably never use the same customer id number for two different customers (enter Y). On the other hand, you may find that two of your customers happen to have the same name (enter N).

#### NOTE

Once a form has been installed and data records have been entered into the form, changes to indexed data areas with require that you rebuild the index. You can change an indexed input area to nonindexed or a nonindexed area to indexed, provided that you renstall your form and then rebuild the index using Service 2 of the File Maintenance facilities. If you have set up separate production disks, then you should make sure that you have transferred the FORM changes using Service 4 of the File Maintenance facilities.

# Optional Step 4: DATA FROM OTHER FORMS

This step is used only when data from another form is to be accessed.

PERSONAL PEARL allows you to get information from other forms when you are entering data, or producing reports. To access data from another form, one data area is designated as the path, or access key to the other form. Other data areas may then be defined as being brought over from the other form. The data which is brought over from the other form may be kept on the file or may be displayed but not kept on the file. (See Chapter 3 for more details.)

The data areas involved in sharing information between two forms must have the same name and type. It is not necessary for the areas to have the same length, but it is good practice for the path area to be the same length. The area designated as the path to the other form must have been defined as an index on the other form (it need not be an index on the current form).

In order to designate a data input area as coming from another form, place the cursor on the first character of the data area, press ctrl/B and answer the questions that follow.

WHAT IS THE OTHER FORM NAME?

Enter the name of the FORM containing the data input area you wish to receive.

WILL DATA IN AREA IDENTIFY AND LINK ANOTHER FORM? (Y/N) Enter a "Y" if this input area is to be used as a path to identify a particular record in the other form. A "Y" nere provides PERSONAL PEARL with the "path link" which creates the "access key". Only one area may be set as the link to a particular other form. If two other forms are to be accessed, then two areas will be designated as paths, one for each other form.

Enter an 'N" if this input area is to be obtained from another form but does not specifically identify the other form

If you respond with an "N" to this prompt, you will be further prompted as follows:

IS DATA FROM THE OTHER FORM BROUGHT INTO THIS AREA FOR DISP\_AY ONLY? (Y/N) Enter a "Y" if the data obtain from the other form is to be displayed, but is not saved on the current form

Enter an "N" if the data is to be DISPLAYED and then SAVED on the current form. In this case, you have the option to change the data after it has been obtained from the other form.

If you do not remember which areas have been defined as input from another form, you may press ctrl/P to highlight those input areas on your current form

#### Step 5: FORM INSTALLATION

Once you have completed definition of your data entry form, you need to INSTALL it so that you may enter data into it.

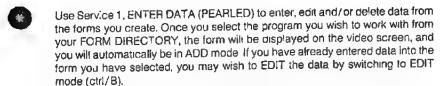
You may change the layout of any of your forms after an installation. However, these changes will not take effect until you reinstall the form. Forgetting to reinstall the form will result in no changes in the entry of data

If the form you are installing gets information from another form, then the second form must be installed first. In practice, this means that when you are defining the path between the two forms, you will need to install the form which information is coming from prior to installing the form the information is going to.

Also, you cannot install a form unless at least ONE data input area has been defined. If you try, the following message will appear:

ATTEMPT TO INSTALL WHEN NO DATA INPUT AREA SPECIFIED Your form cannot be installed until at least one data input area has been defined using option 2 of the selection menu.

# ENTER DATA - Adding, Editing and Deleting



The following control keys are displayed at the bottom of the screen when ADDing or EDITing data into your forms using PERSONAL PEARL:

```
U - Save/Replace record 8 - Switch ADD/EDIT Z - Get next record N - Duplicate last item E - Move cursor up W - Get previous record P - Print current record X - Move cursor down 0 - Delete current record Q - MELP ESC - EXIT
```

ADD mode

While you are in ADD mode, enter data into the data input areas on your input form. Then press the ctrl/U key to add the record to the file. When the form does not end with a computed numeric data area, you may also add the record to the file by pressing RETURN a second time while the cursor is in the last data input area on the form. The data input areas will then be cleared so you may begin entering data for the next record.

When PERSONAL PEARL is ready for you to enter data, you may use the RETURN or TAB key to move from area to area during data entry. Again, depression of the ctrl/U (or pressing RETURN twice) on the last data input area ADDs the record.

When entering data into a data area which is a path to another form, PERSONAL PEARL will attempt to access the record which the data you have entered identifies. If a record is on file in the other form with the same key, then the input will be accepted. If the record is not found in the other file, the bell will sound and data areas which were to be brought from the other form will be displayed as asterisks. In practice, you will not enter the key exactly as it appears in the other form. You will, however, have positioned the index "close" to the desired key. The next step is to scan the other form using the ctrl/Z and ctrl/W commands to find the correct record.

You may switch to EDIT mode by pressing the ctrl/B key combination. The ctrl/B command switches back and forth from ADD to EDIT mode,

#### EDIT mode

After you press ctrl/B to enter the EDIT mode, you will be asked to ENTER KEY. This means that PERSONAL PEARL is waiting for you to enter a key character, word or number into an indexed data input area so it can identify the record you want to display, ed.t or delete Alternatively, you may use ctrl/Z to get the next record in the index. Initially you are positioned to the first record in the first indexed area.

If you are in EDIT mode, you must first get a record from the data file in order to change or DELETE t. This can be done by entering data in any indexed area, or by pressing the ctrl/Z (get next record) or ctrl/W (get previous record). You may then DELETE the record from the file (ctrl/Q), or EDIT the record and then replace it on the data file (ctrl/U).

If you need to abandon your edits enter an ESCAPE. You will then be asked if you want to EXIT.

# DELETEing records

In order to delete a record you must be in EDIT mode and the record to DELETE must be on the screen. A delete request cannot be made if no record has been obtained for deletion.

To delete a record, enter a ctrl/O You will then be asked DELETE (Y/N). Enter a "Y" if you wish to delete the current record on the screen. Otherwise, entry of an "N" will continue processing and not delete the record.

### EXIT?

You may exit from ADD/EDIT processing When you depress ESCAPE, PERSONAL PEARL will respond EXIT? Reply with a "Y" if you wish to leave entry/editing.

You will enter "N" if you wish to continue entering data into your data file. If you wish to continue, PEARL will respond with CONTINUE EDITING.

#### **MESSAGES**

These messages are designed to validate input requests and processes. They will appear at the bottom of your video display screen.

EDIT OPTION You have tried to use an EDIT function in ADD mode. Press ctrl/B a second time to switch to EDIT mode.

DATA REQUIRED This data area is required. You must enter data into this area before the record can be added.

The data you have entered has been added to your ADDED data file. You may now enter data for another record, or press the ctrl/B key a second time to switch to EDIT mode The data record has been deleted Enter ctrl/B to RECORD DELETED return to ADD mode, ctrl/Z to get next record, ctri/W to get previous record, or enter data into an indexed data input area to identify another record to edit The data record has been replaced. Enter ctrl/B to RECORD REPLACED return to ADD mode, ctri/Z to get next record ctrl/W to get previous record or enter an indexed data input area to get another record to EDIT. The record cannot be added because the area **DUPLICATE KEY** specified is UN.QUE to another record already in your NUMBER TOO Not enough digits in the field to fit the numeric value entered. Enter a smaller number. LARGE Enter date in format mmddyy or mm/dd/yy Examples INVALID DATE of correct date entry formats: 12/31/81, 12 31 81, 123181, 12-31-81, etc. Dates which do not exist, like 12/34/82 are also rejected as invalid A record on another file cannot be located based on RECORD NOT the indexed input area you have chosen. Enter a valid **FOUND** indexed value, or ctrl/Z or ctrl/W to get next or previous record. You have come to the end of or the beginning of the

## SPECIAL MESSAGES

END OF FILE

Special messages cover specific conditions which may need attention in order for processing to be continued. Special messages provide solutions to these conditions. See Appendix A should one of these messages appear

## EDITING AN EXISTING DATA FILE AFTER FORM CHANGES

file.

In some instances, you will want to change your forms in some way after you've entered information and created a data base. PERSONAL PEARL lets you change the forms without disturbing your existing data base. You'll be able to use your edited form to add more data, or to print reports, Re-entering information will not be necessary in most cases, but you will need to use the transfer options in the PERSONAL PEARL File Maintenance function (PEARLFM) to transfer form changes to production program files. See Chapter 5 and Appendix E. File maintenence is occasionally required after form changes; when this is the case a message will be displayed upon entry to the ENTER DATA program.



#### **DESIGN REPORTS**

## DISCUSSION

This section covers PERSONAL PEARL report features. It is intended to tie together all the options associated with defining and producing reports.

A report is a part of a program unit. It is necessary for the form to be defined first before a report can be created. Once the designed form has been installed, you may then proceed to define and create reports for the form. You may make changes to the report ayouts, contents or controls at any time. This is done by making the changes desired and reinstalling the report. If you make changes to the form, then you should reinstall all reports for the same form.

#### **DESIGN REPORTS - FEATURES**

- There are three report types: fixed, list, and SuperCalc.
- You may design reports from scratch, from an input form or from a previously designed report.
- Allows for on-screen report formatting.
- You may create printed reports that are wider than your video screen.
- You may sort on up to five data areas, in ascending or descending order.
- You may use data form other forms.
- You can redesign your reports as often as desired.

## **DESIGN REPORT PROCEDURES**

In this section, we will first detail adding a new report to the report directory, then go on to detail the design process. Selection of the report type is part of adding a report to the directory, so the report directory section will include a discussion of the three report types available.



#### REPORT DIRECTORY



The report directory is similar in function and operation to the form directory. The main difference is the new report options displayed when a report is added to the directory.

Report names are up to seven characters in length, starting with a letter, not a digit.

#### **MESSAGES**

DUPLICATE NAME This message is displayed if the name of the report

you have entered has aready been used as a report name by another program or program unit. PEARL does not allow the same report name to be used by

two different programs or program units.

TO DELETE A REPORT You may delete a report from the Report Directory by entering the name of the report and then pressing

ctrl/O.

OK TO DELETE?

You will be asked to enter "Y" to continue deletion of the report from your Report Directory, or enter an "N"

to cease deletion of a report.

## NEW REPORT OPTIONS MENU

If you are creating a new report, you will have three options, prompted as follows:

Option 1 To create a report that uses the same tayout as your input form. This will create a fixed-type report.

Option 2 To copy an existing report. Once you have made a copy of the report you may change the layout of the report.

Option 3 To create a new report on a blank screen.

# MESSAGES



This message is displayed if you tried to create a report using an input FORM before the FORM was created. You must create the input FORM first.





GIVE PEARL THE NAME OF THE REPORT TO COPY:\_\_

If you wish to make a copy of an already existing report, you will be prompted to enter the name of a report you have previously defined If you do not remember the names of your reports, you may press ESCAPE to return to the report directory to view the

report names.

REPORT NOT LOCATED

If you have selected to copy an existing report and it cannot be found the above message is displayed. You will need to either enter a different report name, or press ESCAPE to return to the report directory.

REPORT LOCATED

The above message is displayed if the report layout was already on a disk file even though the name of the file was not in the report directory. You may wish to

change or continue with the same name

DESCRIBE. (name of report)

Once you have given your report a name and decided on one of the three available options, you will be prompted to enter a description of the report. This description will be included in the Report Directory.

#### CREATING A REPORT FROM SCRATCH

If you choose to create a new report from scratch, you will be asked for the report type as follows:

WHAT KIND OF REPORT ARE YOU DEFINING?

There are three different types of reports available: FIXED, LIST and SuperCalc spreadsheet

A thorough discussion of each is included on the following pages. The report type is an important consideration when designing the report format, especially Step 1 of the report design menu.

## LIST

Use a LIST-type report when you wish to summarize the data from the input forms, placing as many lines as possible on each page.

When you create a LIST-type report, you may specify page headings, summary subtotals, and grand totals and footings.

List-type reports are used for reporting information which summarizes records with subtotals and totals, or which print several records on a page.

Lines on a list-type report are divided into five groups or categories. These are:

HEADING A place to put the report title, page number, and any

other information helpful in identifying the report. The HEADING will be repeated at the top of every report

page.

DETAIL A place where one or more lines on the report may be

designated for the output of data from a single record on the program data files. Detail lines will be repeated for each record read from the data file on the report page until the end of page is encountered. DETAIL lines will start with the first record on the program data file or the first record specified on the report subrange (LOW range). Information in the DETAIL will appear in

the report for each record selected.

SUBTOTAL A place where a subtotal line or lines will be printed A

subtotal is printed when a change occurs in the data in the first SORT category is detected when reading

records from the program data file.

TOTAL A place where totals for the report will be printed. This

may be one or more lines, it will be printed when the report has reached the end of all data in the program data file or the end of the report subrange (HIGH

range).

FOOTING A place where a page number or other report identif.-

cation information may be printed. The footing will appear at the bottom of every report page. It may be

one or more lines.

To change the report group for designing a line of the report, use the ctrl/C and ctrl/R commands to cycle through the groups. To change the group to which a report line has already been assigned, delete the line and change groups, then reenter the line.

#### NOTE

Be sure to define some detail or subtotal or total lines in a list report. A list report whose lines are all part of the heading will not have any output since no heading is printed until a detail, subtotal or total line is output.

List-type reports also provide some special symbols which will cause page breaks or blank lines and automatic page numbering the report.

<BLANK> A special symbol which will cause a blank line on the report. Useful for double spacing lists.

<PAGE> A special symbol which will cause a page break when

encountered. For example, this symbol may be used to start a new page after a subtotal. When a new page is started, the footing for the previous page is printed, if one is defined. The heading, if one is defined, will then

be printed on the next page.

#### Four pound signs is a symbol which will cause the

current page number to be printed in that location. This symbol is usually used in a heading or footing

line.

#### **FIXED**

Use a FIXED-type report if you want each record to appear on a separate page. You also use this report type for multi-up reports or labels.

A fixed-type report allows you to define a report in the same way that you design a FORM. This "report form" will be repeated on the report page every time a record is read from the program data file.

Fixed-type reports are useful for generating form letters, mailing labels, and other documents which do not require subtotaling and totaling. This type of report may be printed multi-up, that is several forms across one page.

A fixed-type report is used for (but is not limited to) the printing of labels. The principle is that you design the layout and content of the label that will be repeated for every record read from the form data file. When you get ready to produce the report, you may specify the number of labels that are to be printed from left to right on the report page.

You can create a fixed-type report in three ways.

- One way is to specify that the report is a copy of the program FORM.
- Another way is to design the report from scratch and then specify it as FIXED when you first define it.
- The third way is to use are fixed-type report as the starting point.

## SUPERCALC (Version 1.07 compatible)



Use the SuperCalc spreadsheet option when you wish to create a SuperCalc spreadsheet input file from your Program Data File.

When you use this option, the data output areas in the report will become "cells" in the spreadsheet. Thus, this type of report will create a file which may then be used as the input to SuperCalc.

A SuperCarc report is not produced on paper or on the terminal screen. Instead, it is produced as a file on a disk because it is created as a "spreadsheet" for integration with the SuperCarc software package.

To produce a SuperCalc spreadsheet, you simply design a report in the same way you design a list-type report. The same categories apply to the SuperCalc-type report (i.e., HEADING, DETAIL, SUBTOTALS, TOTALS and FOOTINGS).

Only data areas containing NUMERIC data will be included in the spreadsheet. Each numeric data area will be represented as a spreadsheet "CELL". All data areas with non-numeric data and report "background" will be ignored.



The data areas in each of the DETAIL, SUBTOTAL, and TOTAL categories will each be output on a single line on the spread-sheet. All numeric data areas on a line will be output onto the spreadsheet as contiguous CELLS (i.e. no empty ceils will exist between two CELLS with data.) The first column of the spreadsheet will be left blank.

The spreadsheet file to be produced will automatically be given the disk file name of "TEMP.CAL" by PERSONAL PEARL. It will be output or written to the diskette on the PERSONAL PEARL disk drive (A:), You may change the name of the spreadsheet file and the disk drive to which it is to be written selecting Service 2 (Print Out Details) of the PERSONAL PEARL Produce Reports menu.

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The following is a sample PERSONAL PEARL report layout.

				_
HOWARD COOPER				
2586 LANCASTE				
COMPLITERVILL,	WA.			
CURRENT	CHARGE	PAYMENT	BALANCE	
	200.00	100.00	100.99	
	34.00	00.00	34.00	
	50.00	00.00	50.00	
SUBTOTAL	284.00	100.00	184.00	
JOAN LOLAN				
RT. BOX 67				
HELLVALLY, AL				
CURRENT	CHARGE	PAYMENT	BALANCE	
	10.00	0.00	10.00	
	0.00	10.00	-10.00	
SETOTAL.	10.00	10.00	0.00	
20101WF	10.00	10100	5100	*
GRAND TOTAL	294.00	110.00	184.00	

		A	В	C	Đ	E	F
_	_ <del>'</del>					<u>-</u>	
1	K	>	200.00	100.00	100.99		
2	1		34.00	00.00	34.00		
3	1		50.00	00.00	50.00		
4	1		284.00	100.00	184.00		
5	1		10.00	0.00	10.00		
6	- (		0.00	10.00	-10.00		
7	J		10.00	10.00	0.00		
8	1		294.00	110.00	184.00		
9	1						

#### **DESIGN REPORT STEPS**



The design reports steps are in the logical sequence in which they are performed in order to create a report. The steps may be repeated, but some steps must be performed before others, as follows:

- A data area on a report must be laid out in step 1 before it may be defined in step 2
- An area must be defined in step 2 before it may be specified as being brought in from another form in step 4.
- Step 3 may be performed at any time. Within the above constraints, the steps may be repeated any number of times in any order.

## Step 1: REPORT LAYOUT

In this step, the report format is typed onto the screen in a manner similar to that of designing a form. In list-type reports a number of special symbols may be used to control page numbering and spacing. In both list and SuperCalc reports, lines are identified by group; heading, detail, subtotal, total and footing.

Report layout is slightly different for each of the report types. More information about specific report types was presented the previous section on the report directory.

To layout the report, or to change the layout of an existing report use the control keys to edit the report format. Use underscores and numeric formatting characters in the same manner as that used to layout a form.

**FIXED** 

In order to lay out a FIXED-type report, continue in the same manner you would to lay out a FORM.

LIST

A LIST-type report is used if you want to list summary information, and to compute totals or sublotals from the information entered into your entry form. You may also specify headings and footings for each page of the report.

As you lay out a LIST-type report you must specify the type of category you are entering. The categories are: HEADING, DETAIL, SUBTOTAL, TOTAL and FOOTING.

In order to change the report category, press the clrl/C combination. The category being used will appear in the bottom left-hand corner of the REPORT LAYOUT -- CONTROL KEY screen.

You may add lines to reports at any time. To do so, simply position the cursor to the area into which you want to insert a new line and select the appropriate report category. You may also delete any line from the report. You cannot change a report line category directly. To do so, you must delete the line, and then reenter it into the new report category.

SUPERCALC

The SuperCalc report is similar in format to the LIST-type report Each set of detail, subtotal, or grand total information may be placed as a row of data in the SuperCalc spreadsheet. Within these three groups, each output area you specify will be placed as a cell in the spreadsheet beginning with the second cell in each row. (Refer to your SuperCalc manual for more details.)

When you produce the SuperCalc report, it can be output to a disk file for SuperCalc to use.

WIDE REPORTS

You may design reports that are wider than your video screen. If your video screen can scroll horizontally (your screen can move from left to right and back), then you simply move your screen sideways to continue the layout of each report line. If your video screen cannot scroll horizontally, then you may extend each ine layout by ending it with a bank space followed by a dash "-" and continuing the same report line on the next line of your screen. You may not place the continuation character in the middle of an output area.

For example:

If your video screen supports 40 characters per line (40 columns), and you wish to create a report that is 70 columns wide, then you simple layout each report line using two video screen lines as follows:

40-column video screen layout of 70 column report:

	THAT CSS
	The report will print as follows:
lame :	Address:





Once you have finished the rayout for the report, the next step is to identify the areas on the report where information from your data file will be placed during printing. These output areas are defined in essentially the same manner as data input areas on the input form.

All of the areas which have been specified for output are highlighted on your screen. In order to specify a new data output area in a report, place the cursor on the first character in the output area, and then press ctrl/B. At this time, the data output area will be highlighted, and you will be asked to give it a name.

The following prompts are displayed:

NAME THE DATA OUTPUT AREA HERE: Specify the name of a data input area in your input form in order to print information from your data file

If the output area is to contain data in an entry form, use the same name you used to name the data input area. If the new area is to be computed, or if the area is a computed value, then you should assign a new name



FORMULA FOR COMPUTATION OF OUTPUT (OPTIONAL): if an output area is to be computed during creation of the report, give it a new name, then specify the formula to be used to compute the area based on other data areas in the input form

A FORMULA may be entered to compute a data output area based on other areas in your form. Those other areas need not be present on the report form as long as they have been defined on the entry form.

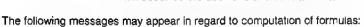
For example:

If two areas on your input form are named HOURS and RATE, you could compute the product of these two values and place it in your report under the new name of GROSS by entering GROSS as the output area name, and using HOURS \* RATE as the FORMULA to compute GROSS.

In your FORMULA, you may use "+" to add values; "-" to subtract one value from another; "\*" to multiply two values together, and "/" to divide one value into another. You may also use "(" and ")" to indicate the order in which the computation should occur.

#### For example:

(A + B) \* C causes area A and B to be added and then the total to be multiplied times area C. If no parentheses are used, multiplications and divisions will occur before additions and subtractions,



# EXTERNAL FILE CONFLICT

You may not compute a value also specified as being a data input area from another form.

#### SYNTAX ERROR

There is a syntax error in your formula. The type of the error may be as follows:

- Unbalanced parenthesis.
- An input area name is too long.
- Order of input area names and arithmetic operaators (i.e., +, -, /, \*) is invaid, OR
- The first character of an input area may not start with a number.

The Advanced Tutorial Guide and Chapter 3 of this manual cover specific examples of computations.

## Step 3: SORT PRIORITY

Use this option to specify the order in which the records on the input file will be placed on your report. If no sort priority is specified, then the records on the report will appear in the order in which they physically appear on the data file. This order is unpredictable. If only one sort order is specified, and the data area has been defined as an index, then the index will be used to sequence the records on the report, and no sorting will be done.

You may also specify the order in which the report will be printed based on any of the information present in the program form, regardless of whether or not the data area appears on the report. Computed areas may not be used to sort the file.

## For example:

If you have the data input areas ZIP, STATE, and NAME on your entry form, you can specify that the report be ordered first by STATE, then ZIP, and then NAME. This is done by specifying the sequence for STATE, ZIP, and NAME as being 1, 2 and 3, respectively.

Subtotaling is based on the first sort area defined. When the value in the first sort area changes when the report is produced that is the signal to print the subtotal group of lines.

The order in which the report is produced defaults to ascending order. If you need the report ordered in descending order, then you must specify that it be produced in REVERSE order. This option can be selected for one or more data input areas that are defined for sorting. To specify reverse order, enter an "R" below the data area name in the sort prior ty menu.

#### CHARACTER SORT ORDER

The following is a table describing the ascending order of characters. When sorting, towercase letters are treated as uppercase. When indexing, uppercase comes before lower case. The list reads from top to bottom.

space	1	8	D	P	1	h	t
1	-	9	E	Q	1	i	u
11		:	F	R	^	j	V
#	/	- 2	G	S	_	k	W
\$	0	<	Н	Т		ι	×
X	1	=	I	U	а	m	У
&	2	>	J	V	ь	n	Z
,	3	?	K	W	С	0	- (
(	4	മ	L	X	d	р	1
)	5	Α	M	Y	е	q	}
*	6	В	N	Z	f	r	~
+	7	C.	0	- 5	f	S	

## Step 4: DATA FROM OTHER FORMS

As with DESIGN FORMs, you may reference data from other forms when creating a report using this option. Other forms refers to those forms that are not part of the same program unit. Select the data area used to reference the other form by placing the cursor on that area, and then press ctrl/B to specify the manner in which the area is to be used.

A referenced area may be used to identify and find another form, or it may be used to output data once the other form is referenced.

Note that once another form has been accessed by specifying an area as the link to the other form, any of the input areas in the other form may be used in computations without having to specify them as output areas on the report.

Once another form has been referenced, any area in the other form may be used in a FORMULA for an output area by specifying the other program or form name as the prefix in the formula. To use a data area from another form in a computational statement, specify the other program (form) name as the prefix to the data area name to be used, separating them with a period.



## For example:

If an employee master form (EMPMAST) contains the pay rate (RATE) for an employee, and the form is referenced by an employee id number (EMPID) then the pay rate may be used in a formula by using the combined form and area names separated by a period as follows; EMPMAST.RATE.

The formula may look like this: HOURS \* EMPMAST\_RATE

The following prompts will be displayed:

WHAT IS THE OTHER FORM NAME?

Enter the name of the other FORM containing the information you wish to include in the report.

DOES DATA IN THIS AREA IDENTIFY RECORDS FROM ANOTHER FORM? (Y/N) \_ Enter a "Y" to indicate that the data input/output area is to be used to identify a record from another form. This creates the path which links the two forms. In this case, the area must also occur as an indexed area on the other form, and you must have used the same name in the report you are designing.

Enter a "N" to indicate you wish to use data from the other form in other output areas on the current form.

Please see Chapter 3 for a in-depth explanation.

## Step 5: REPORT INSTALLATION

The last step in report creation is to INSTALL your report. As with FORM creation, you may change a previously defined report at any time, but if you do, you must make sure to reINSTALL it if it has been changed.

If you try to produce a report before it has been installed, the following message is displayed:

REPORT NOT INSTALLED

The report you have selected was not located. In order to produce your report, you must INSTALL it first. Return to the DESIGN REPORTS program and install the report.



## PRODUCE REPORTS



#### DISCUSSION

The report production service lets you print out your reports. Enter the form name and select the PRODUCE REPORTS option. After naming the report to be produced, you may specify final report control definitions, if required

# Selection of High and Low Ranges

You may produce a report that includes only a subset of records (or FORMS) that have been added to the program data file. You may implement or change the specifications before producing the report at any time using option 1 of the PRODUCE REPORTS menu.

#### Report Title

You may add a one-line title to the report at the time it is to be produced. A title may include a page number, the time of day, a date, or any other kind of information helpful in identifying the report.

# Number of Printed Lines on the Report Page



You may change the number of lines you want or nted on the report page. The number of lines spec fied here will include all printed lines of the report including the page HEADING, DETAILS, SUBTOTALS, TOTALS, and FOOTINGS.

# Number of Lines on the Report Page

You may specify the total number of lines that are on the report page (starting from the first line on the top of the page to the last line on the bottom of the page) This feature is used in the event that your printer is not equipped with an automatic feed (form feed).

# Designation of Report Destination

Generally, reports are produced (or output) on paper using a printer. However, this is not the only way of producing reports. Other possible destinations of report output include output to the console screen and to a disk file.

## Number of Forms or Labels Across



This feature is used in conjunction with fixed-type reports only. This option allows you to specify the number of labels (or report forms) that are to be printed from left to right on the report page. The minimum is one. The maximum is 255 divided by the width of each label.

### Width of Each Label

This option is used in conjunction with fixed-type reports only. The label (or report form) width specification directs the printer when to start and end printing each label.



You may change the the label width at any time.

#### Page Numbering

You may designate the printing of page numbers on the report. To specify a page number you place four pound signs (####) in the desired spot on the report layout. This may be done by typing these pound signs as part of the report layout when designing the report, or by including them as a part of the title of the report when you are producing the report.

If you define page numbering during the DESIGN REPORTS service, then you must reinstall the report if this feature is changed.

## Word Processing Reports

You may produce a WordStar document (report) on a disk file. In this way, you may retrieve the document (report) later for text entry and editing and for inclusion with WordStar documents. You may use this option with other word processing software other than WordStar if desired,



## Multi-Up Output

These two features relate to multi-up output of fixed-type reports only.

- You set up the number of reports (labels) across the page.
- You set up the number of reports (labels) down the page.

## PROCEDURES FOR PRODUCING REPORTS

The three functions are listed below:

## Step 1: SELECTION VALUES

When this step is selected, the data input form is displayed. You may enter data into any area or combination of areas to set the low and high ranges of data for records which will be included in the report. If no data is entered, then no range is set.

This option allows you to produce a report that includes only a subset of records (or FORMS) that have been added to the data file. You may implement, or

change the specifications before producing the report at any time using option 1 of the PRODUCE REPORTS menu.

The selection of a report range involves setting the LOW and HIGH values of data input areas on the program input FORM. Any or all of the data input areas that may be used for this purpose.

For each data area selected, you may specify a LOW and/or a HIGH range for the values to be used *For example*, if your program data file contains records with dates from 5/10/80 to 8/01/82, then you will be able to specify a report that includes only records with a date range from 6/03/81 to 7/04/82.

## Step 2: PRINT DETAILS

Print details allow you to specify where the report is to be produced (i.e., on a line printer, on the screen, or on a disk). You can also enter the width and length of the report pages, and the number of reports to be printed abreast on a page. You can also specify a title.

TITLE

The title will be used on LIST or FIXED-type reports. If a title is entered, it will be printed at the top of each printed page.

NUMBER OF REPORT LINES The number you enter specifies the number of lines which should be printed before skipping to the top of the next page. This is the number of printed lines output per page.

This feature is used in conjunction with the NUMBER OF LINES ON THE REPORT PAGE to designate margins for the top and the bottom of the page.

The number of printed lines may be changed at any time prior to producing the report. It does not require the reinstallation of the report.

TOTAL LINES PER PAGE The total number of lines per page is the number between the top of the first page to the top of the next page.

For Example:

8 1/2 x 11-inch paper, 6 characters per inch equals 66 lines per page. If your printer is equipped with automatic FORM FEED, you may leave the value at 0.

For output to the video display screen, the value would be the number of lines you wish to appear on the screen before pausing to allow for review of the current page (i.e., 23)

This feature may also be used to print more than one report page on a given sheet of paper.

## For example.

If the number of lines to be printed on the sheet of paper is 66 lines per page, and you specify the number of lines on the report is 33, then the result is that two report pages will be produced on each sheet of paper.

You may change this specification before you are ready to produce the report You do not have to reinstall the report every time you change the specified number.

FILE NAME FOR REPORT There are four possiblities for file names: printer output, console output, disk file output, and SuperCalc output.

Printer Output

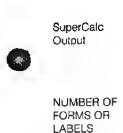
If you leave this area blank, your report will be printed on your line printer.

Console Output

If you enter "CON:", this means you wish the report to be routed to your video dispray screen.

Disk File Output You may store your report on a file by specifying a valid CP/M file name, such as B:REPORT.DOC. In this case, your report will be stored on disk B, with the name given of REPORT.DOC. Selecting this option allows you to retrieve the report document for editing and/or printing using another program, such as WordStar.

The special file type of .DAT may be used to output a report without page breaks. This will suppress the output of headers except for the first one, and the output of footers.



**ACROSS** 

You may also use this option for SuperCalc spreadsheet reports. If your report is a SuperCalc spreadsheet, it will automatically be assigned the name of "TEMP CAL", unless you change it to a different name, such as "PROJECT CAL".

This option allows you to print fixed-type reports multiup. When you design a report layout to be printed multi-up, do so by laying out on the screen only one report and then specifying here the number of reports you want printed from left to right on a page. A good use of this capability is the printing of labels.

You may change the number of labels to be printed at any time.

SINGLE FORM WIDTH

This value specifies the number of columns wide each report is when multi-up reports are being printed.

This value specifies the width of a single report (see above), expressed in the number of columns wide. A column is the space required to print a single character.

## Step 3: FINAL REPORT

Selection of Step 3 will cause the report to be produced. If the report is sorted the sort utility will be invoked and a message displayed. When the report is complete control returns to the service menu.

To abort a report in progress use the escape key.

# Chapter 3

## Advanced Features

#### MULTIPLE FORM PROCESSING

PERSONAL PEARL provides you with the ability to create multiple program units that "snare", or transfer information, information sharing is based on the DATA INPUT AREA NAMES, and the FORM NAMES of the program units involved. A program unit consists of a FORM and its associated REPORTs

Information sharing only occurs during the production of REPORTS, and the ENTRY of DATA.

Information sharing is directional. This means that information can be transmitted between two program units in only one direction one program unit sends and the other receives. Program units under execution (ENTER DATA, and PRODUCE REPORTS services) can only "receive" and process information from other external "sending" forms.

Data from external forms is not affected by current input and editing functions. The data they contain is "write protected" against change and it is 'read only". Program units that receive information may incorporate any data they receive. Incorporation includes the dispray, editing, and addition of such data to the data file of the program unit under execution.

Information can only be shared between a maximum of 5 program units. This means that while you are executing one program unit, i.e., entering data or producing reports, you may access information from only 4 external forms. An attempt to access more than four (4) external forms will result in a special message during INSTALLATION.

Information sharing cannot be circular. A program unit that accesses information from external program unit cannot provide information to those same program units. In addition, information may not be accessed from a form through an intermediate one. This means that form references must be direct.

Only data input areas defined on external FORMS may be accessed from external program units. Data output areas defined on REPORTS are not available for sharing.

An external form must have an INDEXED data input area defined. This INDEXED data area is used by the program under execution to access the appropriate record. The INDEXED data area does not have to be unique (it does not have to reference one and only one record.)

There is no limit to the number of data areas that may be shared between two or more program units. The program under execution has full use of all data areas on the external forms it accesses. In other words, all data areas become part of the information pool of the program unit under execution.

The definition of information sharing occurs during the design of the FORM and the REPORT of the program unit that will receive data from external forms. External forms need not know that they are or will be sharing information.

An external form must be completed and installed first before the receiving program unit is installed. All program units that share data must reside on the same program disk. If you set up a separate data diskette, then all data files must reside on one program data disk.

Data is shared by referencing the data area name and the external FORM name. The first reference to an external form must be to the INDEXED data input area that will identify the record to be accessed.

Shared data areas must have the same data area name and the same data area type. When a data area from an external form is used in a computational statement, then it must be prefixed by the other FORM name. An example would be CUSTOM.CHARGE where "CUSTOM" is the name of the external form, and "CHARGE" is the data area name.

Shared data that is not used in a computational statement should be defined separately as "DATA FROM OTHER FORMS".

### Example:

The following example shows the steps and the method used to create an information sharing path between an external or "sending" form called CUSTOM, and a receiving form called CHARGES. First, the external form is designed and then installed. This is followed by the design and installation of the receiving form.

The external (sending) form (CUSTOM):





## FORM LAYOUT

	Customer	Financial	Master	Form.
ddress			=	
harges: Credit \$	0.00 %			
Tax \$9.9				

# FORM name: CUSTOM

# DATA INPUT AREAS:

Name	Туре	Index
NAME ADDRESS CHARGE TAX PHONE	C (character) C (character) N (number) N (number) C (character)	non unique index none none none unique index

# The receiving form (CHARGES):

The receiving form will access all the data areas defined for the form CUSTOM. The data accessed will be displayed, displayed and saved, or used in calculations. The NAME will be used to access the correct external record. ADDRESS, and PHONE will be displayed only. CHARGE, and TAX will be used in calculations.

#### FORM LAYOUT

Name		nt Charges Form or Customers	
	Address Phone		
		Charges:	
			lit \$9.99 %
PURCHASE AMOUNT :	\$99,999.99	t	ax \$9.99 %
		Details:	
		Credit charge	\$99,999,99
			\$99,999.99
		TOTAL	\$99,999.99

Form name: CHARGES

## DATA AREA NAME:

NAME

This is the name of the data area that will be used to record the name of a customer.

It is an INDEXED data input area.

It is defined also as DATA FROM OTHER FORMS. In order for it to be retrieved from another form, it must also have the same data area name as that defined for the other external form.

This data area is also used to identify records from the external form. No other data area name need be defined in this way.

This data area must be of the same type (C) as that on the external form.

Data for this area will be input by ENTERING DATA into the form CHARGES.

ADDRESS PHONE CHARGE TAX

**ACHARGE** 

**ATAX** 

These data areas will contain the address, phone number charge, and tax on credits and will be displayed only

They are not defined as INDEXED

They are of the same type as those data areas on the external

You will not have to enter any data into the FORM for these data areas. The information will be automatically accessed and displayed from the external form.

AMOUNT This data area is used to record the purchase amount. This data area is of TYPE Numeric, and it is required input.

This is the service charge amount to be applied against the purchase amount. It is Numeric, and it is calculated. The calculation is as follows:

# AMOUNT\*(CUSTOM.CHARGE/100)

Where AMOUNT is the data area name for the amount of purchase

CUSTOM is the name of the external form from which CHARGE is accessed.

Note the method of constructing the external data area reterence from the data area name and the form name. This is called the STANDARD EXTERNAL REFERENCE.

Another way to write the same computation is:

#### AMOUNT\*(CHARGE/100)

Note that in this case, no reference was made to the external form name. This is only allowed if you have previously defined or used the data area on the same FORM or report. It will also be saved if it is defined on a FORM.

When the calculation is complete, the amount is displayed.

This is the tax to be applied against the amount. This data area is of type Numeric, and it is automatically calculated and displayed. The formula for calculation is as follows:

AMOUNT\*(CUSTOM\_TAX/100)

**TOTAL** 

This is the total cost to the customer of his or her purchase. It is calculated and then displayed automatically. The calculation statement is as follows:

AMOUNT+ACHARGE+ATAX

#### COMPUTATIONS

PERSONAL PEARL also provides you with the ability to create programs that store and perform computations on data. Computations may be defined when you design either a FORM or a REPORT

Any Numeric data area on a FORM, or a REPORT, can have a computational statement as part of its definition. The result of the computation can be referenced using the data area name.

The computational statement should consist of one or more data area names (operands) and at least one operation character (operator). Four operation characters are available. The operational characters for SUBTRACTION ADDITION, DIVISION, and MULTIPLICATION are "-", "+", "/", "\*", respectively.

Data area names used in computations must be defined first before they can be used in a computational statement. Computational statements may use data from other forms (i.e. external forms).

Repetitive computations are provided on REPORTS. These are the calculations of TOTALS, and SUBTOTALS.

The following is a detailed discussion of the rules and features associated with the use of calculations, and the construction of calculation statements. See also the Advanced Tutorial User's Guide and Chapter 2 of this manual for examples and additional discussion,

# 1. Calculation Statement Construction Rules.

The following is a list of rules for constructing computational statements as they are defined for a data area.

- Four operational characters (operands) are available. The operational characters for SUBTRACTION, ADDITION, DIVISION, and MULTIPLI-CATION are "-", "+", "/", "\*", respectively.
- A computational statement may contain numbers (constants), or data area names as operands.

#### For example:

If CHARGE and TAX are two data area names, then the computational statement to compute the tax on the charged amount would be "CHARGE\*TAX/100" where '100" is the constant

c A data area used in a computational statement cannot have a number as the first character of the data area name

### For example:

Illegal data area names: 3TAX, 123, 5HATS, and 9HORSES.

Legal data area names: TAX3, T123, HATS5, and HORSES9

A computational statement cannot start or end with an operator.

#### For example:

The computational statement "\*1+3" is not correct because the statement started with a multiplication character. Similarly "CHARGE\*TAX100/" is also not correct because the last character in the statement is a division sign.

e. The left and right parenthesis characters are used to specify segments of computational statements (operations) that will be performed first. If you do not use parenthesis in your computational statements, then the divide and multiplication operations are performed before addition and subtraction.

## For example:

The following two computational statements have the same results although they do not read the same way.

Computation	Result	Reading the Statement
3*4+5	17	three times four plus five
5+3*4	17	five plus three times four

By reading the second statement, you would think that the result should be 32 and not 17 because 5+3 is 8, and 8 times 4 is 32 However, the result is 17 because the multiplication part of the statement was performed first, and so the computation was performed as if the statement read "five plus the result of three times four". In order to get the result of the second computational statement to be 32 it must be rewritten as (5+3)\*4, and it would read "multiply the result of five plus three times four".

The construction of statements within a left and right parenthesis must follow the same rules.

For example:

- "6\*(/CHARGE\*TAX/100)" and "CHARGE\*2TAX/100" are not valid computational statements.
- f. A computational statement may be constructed using data area names from other forms. These data area names must be prefixed by the name of the other "external" form and a period

For example:

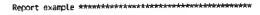
If the other form name is CUSTOM, and the data area name is CHARGE, then the computation statement should refer to the data area "CHARGE" as CUSTOM.CHARGE.

2. Computational Statements and Report Subtotals.

Subtotal computational statements are a special case of computational statements, and are used only in list and SuperCalc-type reports. In order to print a subtotal, you must define a new data area. The definition should also include a computational statement. The computational statement should start with the new data area name as the first operand. It should then be followed by a "+", and the data area name (or names) of the data area(s) that are to be subtotaled.

A subtotal statement will be printed every time the value of the first sort priority data area changes.

An example would be if the data areas "CHARGE", and "TAX" are to be subtotaled for each customer on a periodic transaction report. The subtotal is to reflect both the charge and the tax. First, make sure that "CHARGE" and "TAX" have been defined on the report. Second, define the subtotal data area with the data area name "SUBTOT", and the computational statement "SUBTOT+CHARGE+CHARGE+TAX/100".



	Charge	Tax	
customer 23-12	\$100	\$10	
	\$60	\$6	
	\$1000	\$100	
		Subtotal	\$1,276

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Note that only LiST and SuperCalc-type reports provide for the definition of subtotal statements. These subtotal statements are executed only when the report is sorted, and the data content of the first sort priority data area has changed.

#### For example:

If the customer number was chosen as the first sort attribute of the report mentioned above, then any subtotal statements defined will be executed when the customer number changes as the report is being produced

### Computational Statements and Report Totals.

Total computational statements are a special case of computational statements, and are used only in reports. In order to print a total for a report, you must define a new data area. The definition should a so include a computational statement. The computational statement should start with the new data area name as the first operand it should then be followed by a "+", and the data area name (or names) of the data area(s) that are to be totaled.

#### For example.

The data areas "CHARGE" and "TAX" are to be totaled for a periodic transaction report. The total is to reflect both the charge and the tax. First, make sure that "CHARGE" and "TAX" have been defined on the report. Second, define the total data area with the data area name 'TOT' and the computational statement "TOT+CHARGE+CHARGE\*TAX/100".

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Report example \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Charge Tax \$100 \$10 customer 23-12 \$60 \$6 \$1000 \$100 Subtotal \$1,276 \$900 \$90 customer 23-13 \$40 \$4 Subtotal \$1,034 Total \$2,310

Note that only LIST and SuperCalc-type reports provide for the definition of total statements. Total statements are executed at the end of the report.

4. SuperCalc Reports and Computational Statements.

Computational statements defined on a SuperCalc-type report are not transferred to the SuperCalc spreadsheet. Only the results of calculations are transferred to spreadsheet cells. For more information on working with SuperCalc, please refer to the General Reference, Chapter 2 and Appendix H.

# MULTIPLE RECORD TYPES AND CONTROL INFORMATION



Many applications lend themselves to a structure where information in several formats resides in the same file. For example: A factory may keep one kind of employee record for factory workers and another for management workers and require both kinds of records in the same report. This then is a program with mixed record types. The two types of employee records can be, in the context of PERSONAL PEARL, variations of one data input form.

The use of mixed record types can allow for a single data input form to handle more than one type of entry. This simplifies input because data can be batch input without changing forms.

Flexibility is added to report design for files with mixed record types since the mixed types may be listed together, or separated into groups using report selection values

The same architecture which provides the means of mixed record typing also allows for associating control information with record types, both numeric and textual, which are not displayed on the data input form.



Multiple record typing, in general, requires that the various types of records have a similar structure. That is, the two types of data input forms have about the same number of character input areas and numeric input areas, arranged in the same places on the form. The two types need not be exactly the same, as unneeded areas in one type may be left unused without disk storage overhead.

## CONTROL MASKS

PERSONAL PEARL supports multiple record types through the use of "control masks". A control mask is simply a name given an external form with only a few records (usually just two or three) used to modify the main form. The modifications take the form of changing the prompts for the various data areas and supplying numeric coefficients for computations associated with the type.

The technique is based on PERSONAL PEARL's ability to create an input form that shares data from an external form, as discussed in Chapter 2 of the Reference Manual. During data entry when the access key to the external Mask form is entered, all the data associated with the access key is displayed in the main form.



An example of a simple Accounts Payable system follows to illustrate this technique for you. The Journal of the system has two types of entries: invoices and checks. This is a good use of multiple record typing because the two types have a similar structure, i.e., they both have a date, a vendor, an amount, etc.

The two types differ slightly in that invoices have an "expense distribution class", and checks do not. We will use a message stored in the "C" record of the control mask form in order to inform the operator to ignore the expense distribution class area when entering a check.

Refer to the form layout reports following this example for details on the design of the Journal and its control mask. We will now proceed to sketch the process.

### Main Journal Data Entry Form

numberdateamount Vendor	t _ ( I for invoice, C for check )
Joi	urnal Control Mask Form
Entry type: _ Number area prompt: _ Date area prompt: _ Amount area prompt: _ Expense area prompt: _	
Invoice coefficient: 9 (	1 if invoice, 0 if check ) -1 if check, 1 if invoice )

The coefficients shown in the above control mask will be used later when designing reports, and we will return to them later in the section.

#### **DESIGN STEPS**

- Design the control mask first.
  - The Entry type is a one character input area.
  - It is the only index for the mask
  - It has been defined as a unique index.
- 2. Install the mask and then,
  - Go to the enter data service.
  - Enter a C type record and an I type record into the file. The data for the two records is shown below.

The result is as follows:

Journal Control Mask for Type ! (Invoices)

```
Entry type: I ( I for invoice, C for check )
```

Number area prompt: Invoice Date area prompt: Invoice Amount area prompt: Invoice Expense area prompt: Expense class

Invoice coefficient: 1 ( 1 if invoice, D if check ) Balance coefficient: 1 ( -1 if check, 1 if invoice )

Journal Control Mask for Type C (Checks)

Entry type: C ( I for invoice, C for check )

Number area prompt: Check
Date area prompt: Check
Amount area prompt: Check
Expense area prompt: Enter O here.

Invoice coefficient: 0 ( 1 if invoice, 0 if check )
Balance coefficient: -1 ( -1 if check, 1 if invoice )

Note that the word "Check" was right-justified when we entered the C type record above. The reason for this will be apparent when the word is displayed in the journal form prompt area.

- 3. Design the Journal next.
  - The journal needs to access the control mask form. Therefore, define
    the prompt areas in the journal form with the same names and
    lengths as the corresponding areas in the control mask.
  - Then, use Step 4 of the design process to set the type as the link or path to the mask, and
  - Define the prompts as display only areas.
- 4. Install the Journal and then,
  - Go to the enter data service and add a journal record.
  - When the form is displayed for data entry:

Enter journal entry number one, then,

Enter I for invoice.

Note that when the I is typed, no return is necessary for the mask to be accessed. The cursor advances to the next field. The screen will appear as follows.

## Main Journal Data Entry Form

Journal, entry number	: 1
Entry type	: I ( I for invoice, C for check
Invoice number	:
Invoice date	:
Invoice amount	<b>:</b>
Vendor	:
Мето	:
Expense class	ī



- Fill in the remainder of the form and enter the record.
- Now, try check entry on Journal entry number two.
- When the C is entered for type, the mask for check entry will be accessed and the screen will appear as follows:

Journal entry number	: 2
Entry type	: C ( I for invoice, C for check )
Check number	: ——
	:
•	:
74	:
	:
Enter O here.	·

Note the message to enter 0 for the expense type. By the use of the invoice coefficient, we can zero out this value on subsequent reports, regardless of what is entered in this area. In this way, we make the expense class area a "don't care" area on check entry.

5. Design the Vendor Ledger Report.

This report sorts the journal by vendor, by date, and by journal entry number. The report shows the amount of each entry and keeps a running balance by using the balance coefficient in the control mask. The vendor ledger can be designed as follows: (Refer to the layout report at the end of this chapter for details on the design.)

tгy	_	Гуре	Number	Date	Amount	Balance
11	I	Invoice	3456	7/2/82	102.30	0.00
22	I	Invoice	3567	7/4/82	75.50	102.30
27	C	Check	12	7/12/82	177.80	177.80

Note that the type appears on the report. Once again, this area is used to access the control mask. The data used from the mask in this report is the Number prompt which supplies the word "Invoice" or "Check" and the plus one (1) or minus one (-1) of the balance coefficient used in keeping the running balance.



In general, when moving an application to production status, you will want to remove the mask program from the form directory, while leaving the files intact on disk. This will leave the directory uncluttered for the operator and prevent unwanted editing of the control masks

#### **DIRECTORY MAINTENANCE**

PERSONAL PEARL maintains a form directory and a varying number of report directories, depending on the user's system design. The directories provide features and functions permitting a variety of uses. The most important use of the directory is to control operator access to particular forms and reports.

#### FORM DIRECTORY

For a PERSONAL PEARL system, there is a form directory, and in it are the forms or program units available to the operator This directory is represented on disk as the file PEARL.DIR. A program unit is a data entry form and any number of reports.



Entries are added to the form directory when an attempt is made to access a form that is not in the directory. When this occurs, PERSONAL PEARL will display a message that the form is not located and offer to ADD the form. When a form is added to the directory, the user is prompted to enter a description of the form, which also appears in the directory.

When the form is added to the directory, the disk files which comprise a program unit are not created until the the design forms process is performed.

#### Deleting entries

Program units may be deleted from a PERSONAL PEARL generated system at two levels. The program unit may be deleted from the directory by deleting the program unit form name, yet still exist as disk files, or the form may be removed from both the form directory and from the disk.

To delete a form from the directory, enter the name of the form. Then, instead of pressing RETURN, enter ctrl/O PERSONAL PEARL will respond with the message "OK TO DELETE?". You enter "Y ' or "N". If Y is entered, the form will be removed from the PEARL directory.

At this point, the program unit is still in existence on disk but may not be selected from the directory. The program unit and its data may be accessed as an external form by other forms and reports. The program unit may also be restored to the directory using the PEARLDF program by adding the form name to the directory in the usual manner.

To de ete a program unit entirely from the system, it is necessary to both delete the form from the form directory and from the CP/M disk directory. To delete the program unit from the CP/M directory use the CP/M ERA command.

Changing Form Names Form names may be changed only in certain situations. Once a report has been defined for a given form, if the form is renamed, the report is no longer usable. The result then is that forms may be renamed at the cost of losing existing reports which access the form.

To rename a form, use the CP/M command REN to rename the files associated with the form to the new names with the same file types as the originals. The new name must be seven characters or ess. The old form name is then deleted from the form directory and the new name added.

#### REPORT DIRECTORIES

Reports designed with PERSONAL PEARL are associated with a particular form. For each form with associated reports, there is a disk file HONEY DIR, where "HONEY" is the name of the form. This file contains the directory of reports available to the operator.

Adding Entries

To add an entry to the report directory, type in the name of the report. If PERSONAL PEARL cannot locate the report in the directory, the message "NOT LOCATED - ADD?" will be displayed. Enter "Y" for yes, and the report will be added to the directory. The

New Report options will then be displayed.

Deleting Entries

To delete an entry from the directory, type the name of the report and hit ctrl/O rather than RETURN. The message "OK TO DELETE?" will be displayed. Enter "Y" for yes, and the report will be removed from the directory. At this point, the disk files which comprise the report still exist on disk. To remove the report from the system entirely, use the CP/M command ERA to delete the files from the CP/M directory. A report which has been deleted from the report directory, but whose files are still on disk, may be restored by using the design reports service to add the report back to the directory with the same name.

Changing Report Names

To change the name of a report, create a new report with the desired new name. Select the new report option to copy an existing report. Next, delete the original report from the directory, and delete the associated files from the CP/M directory.

AUTOMATIC CURSOR POSITIONING

PERSONAL PEARL has an automatic sequence for positioning the cursor during update processing. That is, during add processing, as data is entered into the form, the cursor moves ahead from field to field in a consistent fashion, depending on the design if the input form. Associated with the automatic motion of the cursor is the triggering of access to external forms and the computation of computed data areas. We will make some general statements about automatic cursor motion, then offer some techniques for making use of and controlling the cursor behavior.

- 1. The cursor moves from input area to input area, from left to right, top to
- When characters have been added to an area until the area is completely full, the cursor will jump to the start of the next input area, without requiring a return to be entered.

- When the RETURN is pressed, the cursor will jump to the next area.
- If a data area is a "display only" area which is brought in from another file, the cursor will not pause on the area, but will continue to the next input
  - When the cursor jumps out of a data area, two automatic processes are
    - First, computations which involve the data area, if any, will be recomputed
    - Second, if the data area is an access key or path to an external form, then the external form will be accessed, and any data from the external form which is to be displayed elsewhere on the current form will be displayed.
  - If a data area has been brought in from another form, but not as a display only area, then the cursor will pause on that area for editing in the same manner as other data input areas.
  - When the cursor jumps out of the last data area on the screen, if there are more pages defined in the form, then the next page of the form will be displayed and the cursor will be positioned on the first data area of the page.
  - When the cursor jumps out of the last data area of the form, one of two things will occur.
    - If the data area is a computed numeric area, then the computations will be refreshed, and the cursor will be positioned to the first data input area on the page.
    - If the last data area of the form is not computed, then the record will be automatically added to the file, and the cursor positioned to the start of the form, ready for the next record to be input.

#### CONTROLLING THE CURSOR

Two kinds of dummy data input areas may be used to control the automatic motion of the cursor without resulting in disk overhead. One area with allow the cursor to pause, and the other wilt force the cursor to move.







CURSOR PAUSE To provide a place for the cursor to pause during data

entry, define a one character input area as a nonindex, not required area. It is often convenient to have the cursor pause next to messages for the operator, or

at the bottom of the input page.

CURSOR SKIP The cursor skip area can be used to force the cursor from the last input area of a form to the first input area

on the last page of the form.

Define a cursor skip area as a one digit, computed numeric area, and compute the area as a constant amount, i.e., 10. PERSONAL PEARL will attempt to display the number ten in the input area which is only one digit long. This will cause an overflow condition to which PERSONAL PEARL respond by displaying an asterisk, and positioning the cursor to the top of the

# FORM LAYOUT (PAGE 1) FOR MASK

	JOURNAL CONTROL MASK
	Entry type: 1 ( I for invoice, C for check )  Number area prompt:
INP	UT AREA ATTRIBUTES:
1	DATA AREA NAME: MI DATA AREA TYPE: CHARACTER
	T REQUIRED DATA DATA AREA IS UNIQUE INDEX
2	DATA AREA NAME: MN DATA AREA TYPE: CHARACTER
3	1234567 DATA AREA NAME: MD DATA AREA TYPE: CHARACTER
4	1234567 DATA AREA NAME: MA DATA AREA TYPE: CHARACTER
5	1234567 DATA AREA NAME: ME DATA AREA TYPE: CHARACTER
	1234567
6	DATA AREA NAME: MIC DATA AREA TYPE: CHARACTER
	1
7	DATA AREA NAME: MBC DATA AREA TYPE: CHARACTER
	12

# FORM LAYOUT (PAGE 1) FOR JOURNAL

	Entry type: 2 ( I for invoice, C for check )  3 number:45 date:6	-
1	UT AREA ATTRIBUTES:  DATA AREA NAME: JE DATA AREA TYPE: NUMBER  123 REQUIRED DATA DATA AREA IS NON UNIQUE INDEX	
2	DATA AREA NAME: MI DATA AREA TYPE: CHARACTER  II REQUIRED DATA FORM: <mask> ACCESS KEY</mask>	
3	DATA AREA NAME: MN DATA AREA TYPE: CHARACTER  1234567 FORM: <mask> DISPLAY ONLY</mask>	
4	DATA AREA NAME: JNUM DATA AREA TYPE: CHARACTER  123456 REGUIRED DATA	
5	DATA AREA NAME: MD DATA AREA TYPE: CHARACTER	
	1234567 FORM: <mask> DISPLAY ONLY</mask>	

DATA AREA NAME: JDATE 6 DATA AREA TYPE: DATE mm/dd/yy 12345678 REQUIRED DATA

DATA AREA NAME: MA DATA AREA TYPE: CHARACTER 7

> 1234567 FORM: <MASK> DISPLAY ONLY

DATA AREA NAME: JAMOUNT DATA AREA TYPE: NUMBER 999,999,99-12345678901 REQUIRED DATA

DATA AREA NAME: VENDOR DATA AREA TYPE: CHARACTER

> 123456789012345678901234567890 1

10 DATA AREA NAME: JMEMO DATA AREA TYPE: CHARACTER

> 123456789012345678901234567890 1 2

DATA AREA NAME: ME 11 DATA AREA TYPE: CHARACTER

> 1234567 FORM: <MASK> DISPLAY ONLY

DATA AREA NAME: EXPENSE DATA AREA TYPE: NUMBER 299 123

HEADING					-
		V	'endor Ledger		
Entry	Type	Number	Date	Amount	Balance
<b>GLANO</b>					
DETAIL					
_1	s	3#	5	6	
SUBTOT :			<u> </u>		
ELANO BLANO			8	Current Balance	
RT T	YPE: LI		dor Ledger DATE.MI-		
ORT O	UTPUT A	REA ATTRI	IBUTES:		
DAT 999 123		NAME: JE			
DAT	A AREA	NAME: MI			
DAT	'A AREA	NAME: MN			
	4567 M: <mas< td=""><td>PRINT</td><td>/DISPLAY (</td><td>ONLY</td><td></td></mas<>	PRINT	/DISPLAY (	ONLY	
		NAME: JN	UM		
123	456				
MM/	A AREA 'DD/YY 845678	NAME: JD	ATE		

- 6 DATA AREA NAME: JAMOUNT 999,999,999
- 7 DATA AREA NAME: RBAL 999.999.99-12345678901
- 8 DATA AREA NAME: VENDOR

12345678901234567890123456789012345 1 2 3

9 DATA AREA NAME: BAL 999.999.99-12345678901 1 COMPUTATION:BAL + ( JAMOUNT \* MASK.MBC )

# Chapter 4

# Layout Reports -- Design Aids

#### INTRODUCTION

The DESIGN FORMS and DESIGN REPORTS services of PERSONAL PEARL will give you quick layout reports on the design work that you have completed on a form or report. The reports are called LAYOUT REPORTS and they are produced on paper using the line printer. They are especially valuable for your own consideration and proofing purposes and are invaluable if you want to share what you are creating with other people who may have important ideas to contribute.

The LAYOUT REPORTS are produced in condensed form, and it is the purpose of this section to show you how to interpret them.

In order to produce a LAYOUT REPORT for the FORM or the REPORT that you have designed simply type a ctrl/P while in the FORM LAYOUT, or the REPORT LAYOUT step (1) of the DESIGN FORM, or DESIGN REPORT services, respectively

LAYOUT REPORTS are produced in two sections. The first is simply a duplication of the FORM, or REPORT design ayout as it appears on the screen. The second consists of a condensed listing of the data areas that have been defined, and the associated attributes (semi-technical data). The following is a discussion of LAYOUT REPORTS and their interpretation.

# **DESIGN FORM (layout reports)**

One report will be produced for each page defined for the FORM. If your FORM consists of more than one page, each must be reported separately by bringing that page on-screen and entering ctrl/P.

Given that you have designed a FORM called CLIENT as follows:

NAME \_\_\_\_\_\_AGE 999

Then a LAYOUT REPORT will be produced in two sections.

The first section will be a reproduction of the FORM as it appears on your console screen with the data input areas numbered from left to right, and top to bottom as follows;

FOR	M LAYOUT (PAGE 1) FOR CLIENT
	E1 2
def liste	e second section will list in condensed format the attributes that you have ined for each data input area. The attributes of the data input areas will be ed in order by the data input area number as designated on the first section he report as follows:
INP	UT AREA ATTRIBUTES:
1	DATA AREA NAME: NAME DATA AREA TYPE: CHARACTER
	12345678901234567890 1 2 REQUIRED DATA
	DATA AREA IS UNIQUE INDEX
2	DATA AREA NAME: AGE DATA AREA TYPE: NUMBER

Data area attributes consist of the answers you gave to the questions presented to you when defining the FORM LAYOUT, DATA AREAS, INDEXED DATA AREAS, and DATA FROM OTHER FORMS. They are listed for each data area in the same order the design steps are ordered. Only applicable attributes are listed. For instance, if a data area is not an INDEX, then its list of attributes will not include any mention of indexing.

The following is a sample listing of attributes for a data area, and a description of each attribute.

DATA AREA NAME: NAME

This is the first statement to appear for each data area. The data area name is "NAME" This line will always be included in the report

DATA AREA TYPE: CHARACTER

The data area type options are CHARACTER, NUMBER, or DATE. This line will always be included in the report.

12345678901234567890 2

This indicates the length of the data area. The data input area in this example is 20 characters long. This line will always be included in a report.

REQUIRED DATA

This line will be printed if you answered Yes to the question 'IS DATA IN THIS AREA REQUIRED"; otherwise, it will not be printed and you can assume that the data is not required.

COMPUTATION: CHARGE\*TAX

This line will contain the computational statement defined for the data area. If you did not specify a computational statement, then it will not appear on the report for the data area. In this example, the computational statement is "CHARGE\*TAX".

DATA AREA IS UNIQUE INDEX

This line will be printed if you defined the data area as indexed, and if it identifies one and only one record on the data file. If it does not identify one and only one record, then the line will say "DATA AREA IS NON UNIQUE INDEX". If this data area is not defined as indexed, then this line will not be printed

FORM: <CLIENT>

This line will be printed if the data in this data area is to be defined as coming from another form in this case, the other form name is "CLIENT". If the data is to be displayed on the screen only and not added to the data file,

then the message "PRINT/DISPLAY ONLY" will be added. If the data area is used to access the other form's record, then the message "ACCESS KEY" will be added This line will not be printed if the data is not from another form

# DESIGN REPORTS (layout report).

One report will be produced for each page defined for the REPORT. If your REPORT consists of more than one page, then you must position to each page and enter a ctrl/P. Multiple-page reports are a characteristic of only FIXED-type reports.

Given that you have designed a REPORT for a form called CLIENT, where the report name is "CLIENTR", the report type is FIXED, and the report is to be sorted by "NAME" first, then by "AGE".

NAME
AGE 999
Then a LAYOUT REPORT will be produced in two sections.
The first section will be a reproduction of the REPORT as it appears on you console screen with the data input areas numbered from left to right, and top a bottom as follows:
REPORT NAME: CLIENTR, FORM NAME: CLIENT
NAME1 AGE2
REPORT DESCRIPTION; CLIENT ID REPORT REPORT TYPE: FIXED
SORT SEQUENCE: NAME_AGE

The second section of the report will list in condensed format the attributes that you have defined for each data input area. The attributes of the data input areas. will be listed in order by the data input area number as designated on the first section of the report as follows:

#### INPUT AREA ATTRIBUTES:

DATA AREA NAME: NAME

12345678901234567890 1

REQUIRED DATA

DATA AREA IS UNIQUE INDEX

2 DATA AREA NAME: AGE

123

Data area attributes consist of the answers you gave to the questions presented to you when defining the REPORT LAYOUT, DATA AREAS, SORT PRIORITIES, and DATA FROM OTHER FORMS. They are listed for each data area in the same order the design steps are ordered. Only applicable attributes are listed

The following is a sample listing of attributes for a data area, and a description of each attribute.

DATA AREA NAME: NAME

This is the first statement to appear for the data output area. The data area name is "NAME". This line will always be included in the report

12345678901234567890 2

This indicates the length of the data area. The data output area in this example is 20 characters long. This line will always be included in a report.

COMPUTATION: CHARGE\*TAX

This line will contain the computational statement defined for the data area. If you did not specify a computational statement, then it will not appear on the report for the data area. In this example, the computational statement is

"CHARGE\*TAX".

FORM: <CLIENT>

This line will be printed if the data in this data area is to be defined as coming from another form In this case, the other form name is "CLIENT". If the data is to be displayed on the screen only and not added to the data file, then the message "PRINT/DISPLAY ONLY" will be added. If the data area is used to access the other form's record then the message "ACCESS KEY" will be added. This line will not be printed if the data is not from

another form.

# Chapter 5

# File Maintenance Program - PEARLFM

#### INTRODUCTION

The PERSONAL PEARL file maintenance utuity (PEARLFM) provides the ability to perform three distinct types of services; you can recover unused disk space in the data file; you can rebuild the index to a data file if there are changes in the form design or an external malfunction (as with a power failure); and you can maintain separate development (design) and production disks.

In order to perform these three services, six program functions are provided as follows:

- Function 1 Provides statistical information on the file, including the size on the disk, number of records, and the amount of unused space. If significant unused space is present, you would use the COMPRESS function described below to reclaim the space.
- Function 2 Rebuilds the index when you add or change the indexing of a form through redesign.
- Function 3 Compresses the data file which will recover any unused disk space. Unused disk space can accumulate as a result of extensive editing of the file. This function may also be used to validate and restore data integrity in the event of an external malfunction.
- Function 4 Creates new data files on a separate production disks
- Function 5 Transfers form changes from development disks to production disks when production disks are maintained separately.
- Function 6 Transfers program changes to apply form and report design changes to production disks when production data files are being maintained separately from the development disks.

In general, functions 4, 5 and 6 are used only when separate development and production disks are being maintained. The most often used function during design work with PERSONAL PEARL is "rebuilding the index". This is required when indexed areas are added or removed from a previously designed form. You will be notified by PERSONAL PEARL with a message if this type of file maintanence is required.

## **PROGRAM OPERATION**

When you enter the File Maintenance Program, the Form Directory will be displayed. Select the form on which file maintenance is to be performed. When a form has been selected, the file maintenance functions will be displayed as follows:

1: FILE SUMMARY DATA 4: CREATE DATA FILE

2: REBUILD INDEX 5: TRANSFER FORM CHANGES

3: COMPACT DATA FILE 6: TRANSFER PROGRAM FILES

FILE MAINTENANCE MENU ----

Form Name: ADDRESS

SELECT A SERVICE NUMBER:

Press RETURN to continue, ? for HELP, or ESC to EXIT

You would select the desired function by number.

## 1. FILE SUMMARY DATA

These messages will be displayed on your screen when you select Function 1.

SUMMARY FILE DATA FOR: ADDRESS.DOD

NUMBER OF RECORDS= 3

FILE VERSION NUMBER= 1

NUMBER OF DATA FIELDS= 6

SPACE AVAILABLE IN DATA DICTIONARY= 2395

SPACE REMAINING ON DISK= 644K

UNUSED SPACE= OK

DATA FILE SIZE= 5K

HARD COPY CY/N

You may press "Y" to get a print out on your printer of these statistics or "N" if you do not want a print out.

These messages are described below as follows:

SUMMARY FILE DATA FOR: xxxxxxx.D00

This is the name assigned to the data file.

NUMBER OF RECORDS =nnnn

This is the number of forms currently on the file. If a system failure occurred during an ENTER DATA process, this will probably be the number of forms at the time the process started, and will not reflect new records added prior to the failure.

FILE VERSION NUMBER=nnnn

This is the number of times the form has been installed.

NUMBER OF DATA FIELDS=nnnn

This is the number of currently active input areas on the screen.

### SPACE AVAILABLE IN DATA DICTIONARY=nnnn

This is the number of available bytes (characters available for expansion of the data dictionary). New input areas may be defined on the input form until this space is exhausted.

#### SPACE REMAINING ON DISK-nnnn

This number times 1024 (1,024 bytes = 1 kilobyte, or 1K) is the number of bytes available for expansion of the data on the data disk. This same information may be obtained through the use of the CP/M STAT command.

#### UNUSED SPACE=nn

This number times 1024 is the number of unused bytes on the data file due to the deletion of data records.

#### DATA FILE SIZE=nnnn

This number times 1024 is the number of bytes used on the data file for the form. This includes the space for the data dictionary which may require 4 to 12K when the form is initially installed depending upon the number of input areas on the input form,

### 2. REBUILDING THE INDEX

Function 2 will rebuild an index for the data file of the form specified. Use of this service is required:

- If your computer has failed during the enter data phase of processing.
- When you have changed a form to include additional indexed areas, or when you have deteted indexed areas from an existing form.

The percentage of index remaining to be built is displayed at the lower right-hand side of your screen. Rebuilding an index may take from less than a minute on a small data file up to more than an hour for data files consisting of several thousand entries. Forms that use more indexed data entry areas require more time to be processed than others that have fewer indexed data areas.

### 3. COMPACT DATA FILE

Function 3 will rebuild the production data file. This service is used when required by procedural steps specified in the manual or when you need to optimize the amount of free storage space on the production diskette.

This service creates a new data file on the program diskette (or production data diskette). The new copy of the data file should be smaller (or more

compact). This is especially true when a considerable amount of editing and deteting of forms has taken place. During the compaction process, data for any data fields which have been deleted from an update form or renamed on the update form will be deleted from the data file.

This service requires some free space on the program diskette. The amount of free space required depends on the size of the data file that is to be rebuilt. This service will look for free space on the available disk drives. You may be asked to place a "blank" diskette on the PERSONAL PEARL disk drive (or another work drive if available).

#### 4. CREATE DATA FILE

Function 4 will create a blank data file into which you may enter data.

This service will be requested by other procedures in the manual or when the following situations occur.

- a. When your data file (generally on a production diskette) becomes too large and you have approached the maximum number of records or forms that can be stored on it. In this case, a new data file on a separate disk can be created. To do so, follows these steps.
  - Make a copy of the program diskette on which the data file resides;
  - 2) Mark the copy as the new program diskette,
  - 3) Place the new copy on the program disk drive,
  - 4) Then execute this option. When requested to place the development d skette on drive A (the copy source drive) place either the development diskette, or the original copy of the data file on A.

Note that using this process would allow you to re-initialize a single file in a set of files without changing the other files during the process. This would be convenient in the case where one of the files on your program diskette is a MASTER file which contains data which is needed from one month to the next, but another file is a transaction file which contains only those transactions which occurred during the month, and you want to create a new file at the beginning of each month.

b. When you want to set up a production diskette from a development diskette. Generally, a program is tested with real data before it is actually used in production (production mode). This is done by adding records or forms to the data file, and checking the results. This service will get rid of all the test data that was added.

c. Some special messages do require that the data file be cleared before changes may be installed. These special messages are associated with the program development process.

### 5. TRANSFER FORM CHANGES

Function 5 is used to update or transfer changes made to the form from the development diskette to the production diskette. This transfer effects only the data file and does not effect any data added to the data file. If a data file is not found on the production diskette (or on the diskette in the program disk drive), then processing will terminate without completing properly, so be sure that your production and your development diskette each contain the data file for the program to which you have made changes. Once this service has been completed, you must also transfer the form update file (file type of .L00) onto the production diskette using service option 6 (TRANSFER PROGRAM FILES).

This service requires two disk drives on the computer.

In order to use this service you must first place the production diskette (object disk) on the program disk drive (usually drive B) and then select Service 5 (TRANSFER FORM CHANGES). During the process of transfer, you will be asked to place the development diskette on disk drive "A" (or another disk work drive) temporarily.

This service will only transfer changes made on one form at a time. If you need to transfer changes made on other program units, then you must return to the PROGRAM DIRECTORY menu and select the other forms that need the transfer of FORM changes.

### 6. TRANSFER PROGRAM FILES

Function 6 will transfer program files from one disk to another. It is most helpful when setting up a production disk, or when a transfer of changes made on the development disk to the production disk is required.

This service requires two disk drives on your computer.

In order to use this service, you must first place the production diskette (object disk) on the program disk drive (or drive B), then select Service 6 (TRANSFER PROGRAM FILES). During the process of transfer, you will be asked to place the development diskette on disk drive "A" (or another disk work drive) temporarily.

### 7. SUMMARY

One of the most powerful features of PERSONAL PEARL is to allow you to extensively alter your input form after you have created a data file without having to re-enter the data on your file to use the new form. The following is a description of the alterations you can make. If your files have been placed in a Production configuration as described above, you will need the service the PEARLFM program in order to install the changes you have made. If your files are still in a development configuration (that is, all of the control files and data files are on the same diskette), you may or may not need the services of the PEARLFM program as described below.

In all cases, if your data file is in production status (that is, the data files and the control files reside on separate disks), you will need to use option 5 on the File Maintenance Service menu in order to transfer the form changes to your data file. If you are still using a development configuration, option 4 will not be needed before the following file maintenance operations are performed.

Alteration	PEARLFM Services Provided
Change an existing input area to an indexed area	When a key is added, the index must be rebuilt using option 2.
Change an existing indexed area to a nonindexed area	When a key field is deleted, the index must be "rebuilt".
Delete an input area from the form	When an input area is deleted, option 3 may be used to copy and compress the data file. While this will remove the data for the delete input area. from the file, it is not required.
Add an input area to the form.	No file maintenance is necessary.
Add a reference to another form.	No file maintenance is necessary.
Extend the length of the input area	No file maintenance is necessary.
Decrease the length of of an input area	No file maintenance is necessary.

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Changing the position of existing input areas on the form

No file maintenance is necessary. (Note: Always be sure to use the same input area name. If you do not, it is the same as deleting one input area and adding another,

The following alterations of existing forms are not allowed by PERSONAL PEARL. If you make these alterations, you will have to create a new data file from scratch. That is, these alterations may not be applied to existing data files.

#### Alterations

Change input area TYPE

For example, you may not change the TYPE of an input area from a C)haracter to a D)ate, or

vice versa.

Change input area NAME

If you change the NAME of an input area, you will effectively delete all of the data stored under the old name and begin storing new data using the new name.

### Chapter 6

### CP/M File Maintenance

CP/M file maintenance will allow you to move ahead with useful information already in your possession. File maintenance involves both knowledge of the operational rules of the CP/M operating system and knowledge of the importance of good file maintenance.

Your PERSONAL PEARL software operates under the CP/M operating system provided with your computer. Maintaining and working with programs and data files under this, or any, operating system, requires knowledge of some of the system's functional commands. The CP/M commands that are most important for you to know in order to operate your system are, the COPY, PIP, STATus. DIRectory and ERAse commands. Please review your manuals for the appropriate CP/M operating commands for your system. Knowledge of these commands helps assure data integrity and facilitates data handling.

We cannot stress enough the importance of good file maintenance. Proper file maintenance can mean the difference between finishing the job or starting over, moving ahead on a project or backtracking. There are few things more frustrating than having to redo hours of work because you somehow lost your files and aren't sure where you are. The following information provides you with some background knowledge of the above commands you need in order to feel confident when using PERSONAL PEARL.

### **BACKUPS**

Backup copies of your disks can save you hours of re-entry time should a disk become inoperative. Duplicate copies give you security for your files and protect your investment of both time and resources. All backups must be done accurately and labeled (CAUTION: do not use ball point pens when labeling a backup disk; use felt tip).

You should also make sure you have backups of your system disks so you can continue processing should a system disk be destroyed.

Backups should be done on a regular basis, scheduled either by disk or by file. For beginners, the disk method is easier although you should be familiar with both. When entering information into a program, you may wish to do a back-up every few hours.

In the event of a working disk failure, your backup will be used to create a new working disk by copying from the backup onto a fresh new disk. You should discard the disk that fails.

#### FORMATTING DISKETTES

You should format new diskettes before using them, and re-format diskettes which have been used on a periodic basis before backing them up. The CP/M COPY function allows you to format disks.

Any time an error has been detected on a diskette, it should be reformatted before reusing.

These simple procedures should provide you with good file maintenance hab'ts.

### FULL-DISK COPIES: "COPY"

When you choose to make a full diskette copy, all of the data on the diskette is copied on a track-by-track basis. (A track is very similar to a groove on a record platter.) Those tracks containing data are copied as well as those tracks which are empty. Variations of the command you enter is COPY "ALL", "SYSTEM", or "DATA".

#### BACKING UP FILES USING PIP (FILE-BY-FILE COPIES)

The second alternative used to copy files from one diskette to another is PiP, the (Peripheral Interface Program). This program is used to make copies from one diskette to another on a file-by-file basis.

When data is stored on a diskette, the data within a single file may be spread over a number of areas on a diskette. There will generally be a number of unused tracks on the diskette. PIP does not try to read any track on which there is no data stored. One variation of the PIP command is: "PIP B:=A: filename", instructing the computer to copy the file called "filename" from the disk on drive A to the disk on drive B.

#### **OBTAINING A DIRectory**

If you are curious about the names you have given to your data or program files, in general, you use a CP/M command called a DIRectory which lists on your video screen the names of files and programs.

All you need to do to get a list of your file names is to enter DIR after the A.

A>DIR			or	A>DIR B:	

Shows files on disk in drive A Shows files on disk in drive B

Your video screen will display a list of file names, such as:

A>DIR B:

B:ADDRESS EOO :PEARL DIR :ADDRESS ROO

B:ADDRESS SOO :ADRLIST EOO

A>

### **ERAsing FILES**

Another CP/M function that may at times be useful is the ERAse command. This command allows you to erase files from disk. You must be careful when using this function. In other words, make sure you want to erase a file from disk before using the command. The command works as follows:

A>ERA B: ADDRESS.EOO or A>ERA PIP.COM

Erases file ADDRESS.EOO Erases PIP.COM file from drive B from drive A

A>ERA B:\*.BAK

Entering this command would erase all files with a TYPE of BAK (your backup files on the disk currently in drive B). It would not erase any other files Sometimes you may want to do this before you begin a disk-to-disk COPY DATA function in order not to copy over the back-up files, since copying the data onto another disk will serve as your backup anyway.

### **CHECK STATus**

The STAT command may be used to check the amount of space left on the currently logged on disk in your computer. For example, for a two disk drive system:

A>STAT or A>STAT B:

Tells how much space is on disk drive A, is left on disk drive B.

The command A>STAT."filename" lists the amount of disk space the "filename" takes up on the disk in drive A.

The command A>STAT B: \*.\* lists the space left on the disk in drive B as well as listing all the files currently stored on that disk.

Your CP/M manual will provide you with more in-depth discussions of the operating functions and variations of your CP/M system and the commands described above.

# Chapter 7

## Notes for BASIC Programmers

The following is a discussion and an example of how data from PERSONAL PEARL data files may be processed by programs written in BASIC. You can access PERSONAL PEARL data files from your own BASiC program!

In order to process PERSONAL PEARL data files from programs written in BASiC or any other programming language, an intermediate data file is created using the PERSONAL PEARL report writer. Special care must be taken in defining the output format of the file. The name of the output file created by the report writer must have the CP/M file type of .DAT. The following is a summary of the steps which are required, and a sample program written in MBASIC:

 Design a LIST-type report for the data file you are going to process. The report you create will be written to a data file which may then be read by a BASIC program.

Note the following when you design the report:

- a. Any data you define in the HEADING portion of the report will be output only once at the beginning of the file you create. In most cases, you will probably not want to have any HEADING data at all.
- b. All output areas should be separated by commas.
- Character and date type output areas should have quotes around them
- When you run the PEARLPR program to create the data file the name of the output file must have a type of .DAT specified. This will tell PERSONAL PEARL that you do not want to skip to TOP of FORM between pages.
- 3. Example:
  - In the following example, the data file we are processing has four areas defined as follows:

ONE Defined as a character area.

TWO Defined as a numeric area.

100 STOP

THREE Defined as a data area. A computed numeric area. b. The following report has been defined: REPORT NAME: ARPT, PROGRAM NAME: BASICD DETAIL = "\_\_\_\_\_1",\_\_\_\_2,"\_\_\_\_3,"\_\_\_\_\_4 REPORT OUTPUT AREA ATTRIBUTES: 1 DATA AREA NAME: ONE 123456789 2 DATA AREA NAME: TWO 3 DATA AREA NAME: THREE 12345678 4 DATA AREA NAME: FOUR When the report is run, the name of the output file is specified as: **TEST.DAT** The following MBASIC program can then be used to read and list the d. 10 PRINT "READ DATA FILE CREATED BY PERSONAL PEARL REPORT WRITER" 20 OPEN "I",1,"TEST.DAT" 30 PRINT " ONE TWO THREE FOUR" \ #### \ 40 MASK = "\ \ ###,###.##" 50 IF EOF(1) THEN 90 60 INPUT#1, ONES, TWO, THREES, FOUR 70 PRINT USING MASKS; ONES, TWO, THREES, FOUR 80 GOTO 50 90 PRINT "END OF INPUT FILE"

### Chapter 8

# Security Features of PERSONAL PEARL

### INTRODUCTION

PERSONAL PEARL provides several very important security and privacy features. These features help protect you from lost data provide a privacy of files, and provide a natura, way of controlling program modifications.

PERSONAL PEARL provides excellent data reliability and data integrity which protect you from hardware and operator errors. Further, should errors occur, PERSONAL PEARL will recover your data files with a minimum of trouble.

PERSONAL PEARL has many features that are designed to solve any potential security and privacy problems in the office environment. These are discussed in more detail below:

### SECURITY

Reliability and Data Integrity.

Even the best computers are vulnerable to power failures and to lesser extent to static electricity, cosmic rays and other environmental factors. Crashed data files and "BDOS ERRORS" are a fact in computer operations, PERSONAL PEARL provides complete file maintenance facilities for recovering data and index files which rebuild and verify most, if not all, of a crashed file. For example, suppose you have a power failure while updating your files. With many programs, this would render the data files useless. With PERSONAL PEARL, simply perform the index rebuild option of the file maintenance facilities, and your data file will be recovered. At the most, you will lose records being added when the power failure occurred. (See Chapter 5, section 2, for specific procedures.)

- Independence of Program Design and Program Operations.
  - PERSONAL PEARL provides complete control of program modifications. PERSONAL PEARL maintains independent design and operations phases. When a program has been designed and goes into operation (or production), the operators need not have access to the

design process, and therefore, unwanted design modifications will be prevented. You simply keep your Design Forms (PEARLDF) and Design Reports (PEARLDR) disks in a physically secure location not available to the program operators, who only have need for Enter Data (PEARLED) or Produce Reports (PEARLPR).

b. This feature also allows your system to be growing and changing while an earlier production program is "on-line" capturing and using information. When you have completed a new design, you can quickly replace the production copy that is used in the office, preserving the existing data files. The design process can continue and be repeated as often as necessary to keep your information system current with your growing needs. All the while, you maintiain physical control of the design disks.

#### Modification of Sensitive Data Files.

PERSONAL PEARL maintains security of data files in a fashion similar to that of a typical office. Office workers who do the paper filing have access to certain filing cabinets. Further, those in the office who create or process reports or other documents may not have access to all of the files. This usual office task organization is supported in PERSONAL PEARL by creating special purpose production program disks for the various people in the office.

For example: When processing a payroll, one person may have a production program disk allowing for data entry of time tickets while another person has a production program disk which provides for printing checks only. Thus, you may give the responsibility for accurate data entry to one person and the responsibility for printing and mailing checks to another person who won't be able to change the amounts on the checks. In short, you can lock up your payroll production program disks the same way you now lock up your payroll filing cabinet.

All that is required to insure security from unauthorized file modification is to control the use of PEARLED with a particular production program disk. Only the people responsible for updating the file should have access to the use of PEARLED and the production program disk. Locking up PEARLED whenever it's not being used by authorized personnel is like locking your files in the evening so the files cannot be modified.

#### **PRIVACY**



1. Access to Sensitive Information.

Ensuring privacy of sensitive information is accomplished by separating reporting from file updating. Let's return to the example of payroli processing to illustrate limiting parts of the information on file from some users, while making it available to others. The person with the update disk (PEARLED) and payroll update program, the time card entry person, will have full access to the data files; however, the person with a reporting disk (PEARLPR) will have access to only the data specifically designated for the particular report.

Thus, the privacy of information in the payroll file is controlled through limiting particular people to the use of PEARLPR and a specific program report. You can split up a series of different reports to reflect the specific authorized file access available to a series of people. Each person will only have access to the report(s) appropriate to their job function.

The separation of reports into different physical disks is accomplished by copying the "master" program production disk onto a second disk, and then deleting reports that are unauthorized for the persons who will use the second disk. In order to set up a production program disk with one or more of the reports deleted from the disk, the following steps are required:

- a. Create a production program disk as described in Chapter 5, Section
   6. When this is done, your production program disk will contain a master copy of all reports you have designed.
- Make a second copy of the master production disk. The copy is the disk you will set up with only certain authorized report programs on it.
- c. In order to set up a disk with only certain reports to be accessible, use the Design Reports (PEARLDR) program to delete the unauthorized reports from the disk. This can be done by placing the second copy of the production program disk in drive B when PEARLDF is run. After you have selected the Design Reports option, enter the name(s) of the report(s) you wish to delete from the Report Directory, then press ctrl/O rather than return.
- d. Finally, exit to CP/M and delete the report file from the second copy of the production program disk. For example, if the name of the report you wish to delete is CHECKS, then enter the command: ERA B:CHECKS.MOO.

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Check the CP/M directory for the exact name of each report to be deleted. If you have any questions about using CP/M, see Chapter 6 for general reference and your CP/M user's guide for details.

# PRIVACY FROM FILE READING THROUGH OTHER OFFICE PROGRAMS

Beyond the physical control of your production programs, the actual data files have another measure of privacy. PERSONAL PEARL stores data in a unique packed format which cannot be casually processed for reading by other computer programs, like BASIC programs, word processors, such as WordStar, or CP/M utilities.

# Appendix A

### Messages and Codes

### FORM AND REPORT INSTALLATION

#### 200 DATA TYPE CHANGED

REASON: This condition occurs after the initial installation of a form. The form has been edited, and the TYPE for an input area has been changed. For example, an input area named BRTHDAY was originally specified as being a Date field, then changed to Char-

ACTION:

Prior to reinstalling the form, you may make one of the following choices on how to proceed:

- 1. You may change the input area back to the original TYPE.
- 2. You may change the name of the input area. If you make this choice, however, you will lose any data which has been placed in your data file under the original name.
- 3. You may delete your data file. If you make this choice, you will lose any data you have placed in your data file. In the case that you are still testing your form and have not any data but test data, this would probably be the best choice to

In order to erase the data file, you must exit to CP/M and use the CPM ERAse command.

For example:

If your form name is CUSTMR, then you should delete CUSTMR.D00 on the program disk. This may be done using the CP/M ERAse command, i.e., ERA B: CUSTMR.DOO.

Or if you choose options 2 or 3, any reports you have defined may also have to be edited and/or reinstalled.

#### 204 DATE AREA TOO SHORT

REASON: Data input area too short.

For example:

If you define a data input area as a date, the size of this input area must be at least eight characters to accommodate the format mm/dd/yy.

ACTION: Edit the form to increase the length of the input area, then reinstall the form.

#### 205 MAXIMUM INPUT AREA COUNT EXCEEDED

REASON: Over a period of time, the total number of input area names assigned has exceeded the maximum number of 250 for a single form. This includes those fields which have been assigned and then deleted or renamed.

ACTION: You have two choices.

- Delete any new data fields added during the last update, then reinstall the form. This will allow you to use the original form on existing data files.
- Delete the data file for the form, then reinstall. In this case, you will not be able to use the form to process the data in any existing data files which have been created and updated using the form. The number of active data input areas will be reduced to the actual number currently defined on the input form.

#### 207 DATA TYPE MISMATCH

REASON: 1. The same data input area name is used on two different forms; and

- In a report or a form definition, data is obtained from another form using option 4 on the design forms/design report menus and
- The TYPE of one data area does not match that of the other (i.e., if one was defined as "C" (character), and the other was defined as "N" (numeric)).

ACTION: Change the TYPE for the input area for one or the other of the forms or reports being installed, then reinstall.

#### 208 INPUT AREA NAME NOT FOUND



REASON: Option 4 on the design forms or design reports menu has been used to join two data files or forms together, and the input area name cannot be located in the other form.

#### ACTION:

- Verify that the name you are using to identify an input area on the other form is the same name used to dentify the area on the other form
- Verify that the other input form has been installed (Even though the other form has been designed, the input areas do not become available to other forms or reports until the forms have been installed.)
- Change the area name if necessary, then reinstal the form or report.

### 209 INPUT AREA IS NOT INDEXED

REASON

Option 4 in the design forms or design reports menu has been used to join a form or a report to another form, and the input or output area used to join the files together has not been defined as an indexed area on the other form.



- Edit the other form and define the input area used to link the forms as an indexed area (option 3 on the design forms menu.)
- Reinstall the form (If you have active data files for that form, you will also have to use the file maintenance program (PEARLFM) to rebuild the index for that fi.e.)
- Reinstall the form or report in which this condition has occurred.

### 210 TOO MANY FORMS REFERENCED

REASON: A report or a form has been designed to reference more than four other forms.

ACTION: Reduce the number of references to other forms to 4.

#### 211 FORM NOT FOUND

REASON:

During installation of a form or a report, PEARL was unable to find a FORM name specified using option 4 of the design menus to join forms together. (The detail information for the form is located on the .D00 file for the form which is created during installation.)

ACTION-

- Verify that the correct name is specified in coption 4 of the design menu.
- Verify that the other form has been installed 2.
- Reinstal, the form that was being installed when this condi-3. tion occurred. If you have split files between several disk, be sure that the form.D00 file for the other form is on the development diskette during the installation processing.

#### 212 NO PATH TO OTHER FORM

REASON: No "path" index defined on a receiving form.

This condition occurs when one or more path data areas were defined on a receiving form or a report and none were defined as a "path" index. A "path" index is required to select the correct record from a sending form data file.

One "path" data area should have a "Y" response to the question DOES DATA IN THIS AREA IDENTIFY RECORDS FROM ANOTHER FORM (Y/N). See Optional Step 4, Chapter 8. Also, see **CODE 209.** 

ACTION: Select the "path" index used to join the forms together, and then reinstall the form or report.

### 213 MULTIPLE PATHS TO ANOTHER FORM

REASON: Too many path indices defined on a receiving form. Requires that only one data area be defined as indexed and receiving data from another form (path index).

> This condition will occur when you have defined more than one path index to a single external form. (See Optional Step 4, Chapter

ACTION:

Select the one input or output area used to link the forms together, then place an "N" in response to DOES DATA IN THIS AREA IDENTIFY RECORDS FROM ANOTHER FORM in all other data

areas to be provided by other forms, and then reinstall the form or report

#### 214 DATA DICTIONARY ALLOCATION EXCEEDED

REASON: There have been so many additions made to the form since it was originally installed that the area allocated to the data dictionary at the beginning of the data file has overflowed.

This condition is likely to occur if a very small form has been defined and installed initially (say one or two input areas) and then many large input areas are added to the form later.

ACTION: The data file containing the data dictionary will have to be deleted, and the form reinstalled. (Refer to condition code 200 for an example of how a data file may be deleted.)

The best solution here is to prevent the situation from occurring by not installing a form with only one or two input areas defined when it is known that there will be a large number of input areas required in the same form later on.

#### 215 DUPLICATE OUTPUT AREA NAME

REASON: In a report definition, two computed output areas have been assigned the same area name.

ACTION: Change the name of one of the areas and reinstall the report.

### 216 CIRCULAR REFERENCE

REASON. One of the variables in a computation is derived from the input or output area being computed.

This condition will occur if, for example, you define areas A, B and C where A uses B in a computation; B uses C in a computation, and C uses A in a computation. This condition would not occur if C did not use A in the computation.

ACTION: Restate the computations without circular references, then reinstall the form or report.

### 217 AREA IS NOT NUMERIC

REASON: A non-numeric input area name has been used in a computation. For example, an input area defined as a "C"haracter or a "D"ate has been used in the computation.

ACTION,

ACTION: Restate the computation to use only numeric input area names. Then reinstall the form or report.

#### 218 AREA NAME NOT DEFINED

REASON: An input or output area name used in a computation could not be located

1. If the area name refers to an input area in another form, make sure that a path to the other form is identified. Also, if the same area does not appear in the form or report being installed, make sure that the other program name is used as a prefix to the area name in the computation. (For example, in order to use an area name RATE which appears in the program PAYMSTR specify PAYMSTR RATE as the area name, not just RATE.) Also verify that the other form has been installed.

If necessary, restate the computation so that only existing fields are used. Then reinstall the form or report.

#### 220 SORT KEY NOT DEFINED

REASON. This condition occurs when an input area name specified as a sort sequence key (option 3, design reports menu) has not been defined on the input form.

ACTION: Edit the sort sequence keys to use input area names used in the data input form, then re-install the report.

#### 221 UNBALANCED PARENTHESIS

Refer to 248 below

### 222 NAME LENGTH

REASON: The maximum length of an input area or output are name used in a computation was exceeded

ACTION: Exit the computation (The full text of the computation will be displayed or listed with a 248 or 249 number by it.) Then reinstall the form or report.

### 223 SYNTAX

Refer to code 248 below

224 INVALID CONSTANT

Refer to 248 below.

### 248 SYNTAX

REASON: PEARL cannot determine how to compute an input area. This condition may occur for one of several reasons:

- Between two input area names, there must be one operator (operators are: \*, -, + or /)
- Between an input area name and a constant, there must be one operator.
- 3. An input area name starts with a numeric character
- The number of right-hand parenthesis does not match the number of left-hand parenthesis.

ACTION: Restate the computation and reinstall.

# 249 SYNTAX

REASON: Same as 248. However, in this case a pointer "A" indicates the

point at which PEARL could no longer understand the expression.

ACTION: Edit the computation and reinstall.

# Appendix B

### **Program Stop Codes**

The following is a summary of the messages and codes which are provided by PEARL when a condition arises making it impossible for PEARL to continue processing, along with a description of why the condition occurred, and what action should be taken.

FILE NOT FOUND (280-289)

280 PEARL A00 not found

The PEARL SYSTEM file (PEARL.A00) is not on the PEARL SYSTEM disk.

REASON: The PEARL SYSTEM file (PEARL.A00) must be on every PEARL SYSTEM disk. The exception is when PSORT.COM and

PEARLI,COM are on disks separate from the other PEARL pro-

grams.

ACTION: Place the PEARL SYSTEM file (PEARLA00) on the PEARL

SYSTEM disk that was on the PEARL system disk drive at the time

this error occurred.

282 REPORT CONTROL NOT LOCATED

REASON: The report definition file (.R00 file type) could not be located.

ACTION: Create the report definition file using option 2 (DESIGN REPORTS)

of the SERVICE MENU to create a report.

283 INPUT AND OUTPUT DRIVES ARE THE SAME

REASON: The input and output drive to be used for a CREATE DATA FILE by

the FILE MAINTENANCE PROGRAM were the same drive.

ACTION: Edit the data file drive (3rd drive specified) and the copy file source

drive (7th drive specified) in the INSTALL.DAT file DRIVES=option.

The 3rd disk drive specified indicates the drive on which data files are stored, while the 7th drive specified indicates the source during the copy operation. If you have two drives on your system, you will

probably want to specify B as the data file drive and A as the copy source drive. You must then run the INSTALL program to make these changes effective before using the option in the PEARLFM program to CREATE A DATA FILE.

# INCOMPATIBLE VERSION 290 OBJECT MODULE VERSION ERROR

PEARL system version error.

An attempt was made to process a program or a data file which

was created with an earlier release of PEARL,

ACTION: All screens and reports should be reinstalled with your current

copy of the PEARL system.

294 PEARLxx.COM cannot be processed

During system installation one of the PEARL program files cannot

be installed. This may be due to an unmatched set of the PEARL.A00 and PEARLxx.COM files or the programs you have

received may not be properly serialized.

ACTION: Contact the dealer or distributor from whom you purchased PEARL

for assistance.

295 PEARL.A00 file not located during system installation

The PEARL A00 file could be located on the disk being processed REASON:

during system installation.

ACTION: Be certain that there is a copy of the PEARL.A00 file on the

DEFINE FORMS, DESIGN REPORTS, ENTER DATA, PRODUCE REPORTS, and FILE MAINTENANCE disks. If one of these disks does not contain the PEARL.A00 file, use PIP to copy the file CAUTION: The PEARL A00 file on the DESIGN FORMS disk should be used as the source file when making your copy on double density systems. This is the only PEARL.A00 file which is serialized by your distributor. You cannot INSTALL a

system unless it has been serialized.

297 WRONG USER ID

E'ther the system has not been installed and a user id assigned, or REASON: the PEARL.A00 configuration file and PEARLxx.COM files are not

of the same set.

ACTION: Follow the system installation procedures to install your system and assign a user identification, if this has not been done, or verify that the PEARL A00 and PEARLxx.COM files being used are a matching set.

# 298 SYSTEM VERSION NUMBER ERROR

REASON: The PEARL.A00 file which contains system configuration and control information, and the PEARL program files being used are not of the same version.

ACTION: Verify that the files being used were distributed in the same set.

# 299 SERIAL NUMBER VALIDATION

Refer to 297.

# (300 - 307) I/O ERROR

invalid operation detected. Normally, these error conditions are associated with a disk directory being full no room left on the data disk, a damaged disk, or a hardware falure in the disk drive or operation of the computer.

301, 302 Invalid operation detected.

REASON: 1. Hardware problems, or

2. Program failure.

ACTION: 1. Make a fresh copy of the disks that were being processed from backup disks.

If Action 1 does not work, then contact customer support for help.

303 Incomplete processing of program files.

REASON: 1. Hardware problems, or

2. Program failure.

ACTION: 1. Use the PEARL system file maintenance program (PEARLFM, see Chapter 9 and Appendix D), to restore the program data files. This program is called PEARLFM.COM. Also verify any file maintenance statistics.

2. If Action 1 does not work, contact customer support.

#### 304 - 306 Disk is full.

REASON: Your computer operating system (CP/M) cannot increase the size or number of files on the disk.

ACTION:

- If you are sorting a report, then delete (see CP/M ERAse command, Chapter 3) any unnecessary files from your sort work disk.
- If you are creating a program, then remove unnecessary program files that are not associated with the one you are creating
- If you are processing the program data files, and the program disk contains data for only one program defined by PEARL, then a new file will have to be started on another disk. Otherwise, delete unnecessary files on the data disk and use the file maintenance program (PEARLFM) to rebuild the index.

### 309 FILE CLOSE FAILED

REASON: An attempt to close a file has failed.

ACTION: Refer to 301, 302.

307, 319 Unrecognized return code from CP/M. Refer to 301, 302,

### (320 - 349) LOST DATA INTEGRITY

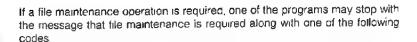
REASON: An attempt to process a program has failed. This may be due to

hardware or memory failure, or a program error.

ACTION: Follow steps in ERROR 301.

### (350 - 369) FILE MAINTENANCE REQUIRED

PEARL provides you the capability to add or delete index keys, to add and delete data items in your data form file, and to redefine relationships between forms without re-entering the data on your files. In order to provide for this, however, the service of the PEARL file maintenance program (PEARLFM) are required



### 350 INDEX NOT COMPATIBLE

- REASON. 1. The data files were created and updated using an earlier version of PEARL, or
  - The input form has been edited and new index areas have been defined, or previously defined index areas have been deleted.

ACTION. Use option 2 on the FILE MAINTENANCE menu to REBUILD THE INDEX for the data file or files which are being processed.

#### 351 DATA DICTIONARY/DATA FILE MISMATCH

REASON. A separate disk has been set up for data files and for program files using one or more of the file maintenance options 4, 5 and 6. At some point after this was done, the data file (and therefore the data dictionary) on the development disk was deleted and the form re-installed. The data file / data dictionary on the development disk

re-installed. The data file/data dictionary on the development disk is not compatible with the data file/data dictionary on the production disk(s).

Each time a form is installed for the first time, a new data file (file type .D00) is created and a unique file identification code is assigned. This unique identification will never change regardless of the changes to the form. That is, new input areas may be added or deleted. However, if the data file is deleted and the form reinstalled, then a new dentification code is assigned, and any data files created on other than the original development disk may no longer be used.

ACTION.

- If it is necessary to maintain compatibility between existing data files and forms and reports which have been updated, copy the data dictionary (.D00 file) from the production data disk back to the development disk. Then, re-install all of the forms and the reports associated with the form.
- Create a new set of production disk using options 4, 5, and/or 6 in the file maintenance program.

#### 352 DATA DICTIONARY NOT COMPATIBLE

REASON: The data files are not compatible with the update form being used for update. There are two situations which can cause this condition to occur.



- If the data file and the program control files all reside on the same disk, this situation will occur if a request to install a form did not complete properly. In this case a message would have occurred on the screen during the install indicating that a computation did not compile properly, that a reference to another form could not be satisfied etc. In this case the data file has been updated and the version incremented, but the update screen has not been fully installed.
- Production program and data files have been configured on separate disks. In this case the PEARLFM program may have been used to copy program or data files from the development to the production disk, but all of the necessary files were not copied. (For example, option 5 was used to transfer form changes to the data files, but option 6 was not used to transfer the program files)

ACTION:

- Note the name of the data file being processed at the time
  the incompatibility was detected. (This will be the name of
  the form you were using to update a file or produce a report
  unless your program uses multiple forms. In the latter case,
  the name of one of the external forms may appear in the
  message window)
- If the name of the form being processed was an external
  form, to be safe you should re-install the external form, then
  reinstall the form for the form which was being used for
  update at the time you received the 251 code. Be sure that
  each form installation step is completed without any messages before going to the next form.
- If you are using a development configuration where all
  program and data files are placed on a single disk, the
  process should be complete, at this point, and you should be
  able to perform the update you were attempting to begin
  with.

4. If you have configured your program files so that the data files and the program files do not reside on a development disk, the next step will be to use the PEARLFM program to transfer program changes (menu option 5) and program files (menu option 6) to production disks. This should be done for all program files which reside on a set of production program disks. That is all referenced files as we las those files which do the referencing.

Note that you may use option 1 on the PEARLFM menu to display the version number of each data file or form. The version number displayed on the production file disk should be the same version number displayed on the development disk for the same form when you have completed the transfer of files from the development to production disks

### 353 DATA/INDEX FILE NOT LOCATED

#### REASON:

An attempt was made to process a form or an external form during update or report processing. However, the form could not be located on the data disk. The name of the form which could not be located is displayed in the message window at the time the message is provided

This will normally happen when development and production files reside on separate disks, and in setting up the production disks not all of the required files were transferred to the production disks.

It may also occur, however, if there is a premature termination of a program in an installation step. For example, if a form is being installed for the first time, and you run out of directory space or your development disk is full, the data file (program D00) may be allocated on the development disk, but the index file (form E00) may not be allocated.

### ACTION:

- Note the name of the form that was being processed at the time the incompatibility was detected. (The name of the form will be displayed in the message window and the bottom of the screen.)
- If you are working with a development disk configuration where all program files reside on a single disk, verify that both the data component and the index component of your program files reside on the disk. (Use the CP/M DIR

command to do this.) If the index file is missing, (form.E00), but the data file is there (form D00) then you may use the PEARLFM program, menu option 2 to create a new index file. Before doing this verify that there is sufficient space on the disk (You may do this using the CP/M STAT command, or option 1 of the PEARLFM service menu.)

 If your development and production files have been configured on separate disks, and you have forgotten to transfer all of the required files to the production disk, use menu options 5 and 6 to complete the transfer

### 354 PREVIOUS UPDATE NOT COMPLETE

REASON: The last time you updated your data file the update program was not terminated normally.

ACTION: Use option 2 of the PEARLFM program to rebuild the index to your data file. (A standard part of this function is to verify the data which was being entered during the previous update.)

#### 357 ATTEMPT TO READ BEYOND END OF FILE

REASON: An attempt was made by the update or report routines to read data beyond what had been written to the file based on internal control pointers. This is most likely due to an update which did not complete properly.

ACTION: Use option 2 of the PEARLEM program to rebuild the index to your data file. (A standard part of this function is to venfy that the data was being entered during the previous update)

### 358 DATA DICTIONARY WILL NOT FIT ON FILE

Refer to installation condition 214.

### 359 DATA FILE MISMATCH

REASON:

An attempt has been made to transfer form changes from the development disk to a production data file disk, and the data files do not match. This occurs if the data file on the development disk has been deleted and the update form reinstalled.

This mismatch situation occurs when the unique file id on the development disk file is not the same as the unique file id on the production data disk. (You may use the file summary statistics display opt on to display the unique file 'd for each data file )

This check guarantees that there will always be a one to one correspondence between the input data areas in your input form and the data stored on your data file.

ACTION:

You have probably made changes to your input form which you wish to incorporate into an existing data file. You may still do this by following the steps outlined below. Before you do this, however, be sure that you make a backup copy of both your production and development disks.

- Use option 4 of the PEARLEM menu to create a data file However, reverse the direction of the copy, using your production data disk as the source rather than your development disk, and make the copy of the file to the development disk rather than to the production data disk Note that this will effectively delete any data you have placed in the data file on your development disk.
- Reinstall the form for the program using the PEARLDF program.
- Use options 5 (transfer form changes) and 6 (copy program files) to transfer the changes from the development disks to your production disks

### 370 - 384 MEMORY POOL EXHAUSTED

REASON. You have defined a program that is too large or complex for your computer to handle.

ACTION Reduce the size of the form or report you are trying to process if the form you are processing calls other forms for information, then decrease the number of forms that are accessed.

### 385 INSUFFICIENT MEMORY FOR MULTI-PRINT FORM BUFFERING

REASON: Insufficient memory available for report. The number and/or size of report forms that are to be printed side-by-side from left to right on a report page is too large (i.e., labels)

ACTION: 1. Reduce the size of the form to be printed.

2 Reduce the number of forms to appear from left to right on the report page.

# 386 INSUFFICIENT MEMORY AVAILABLE TO OPEN FILE

Refer to 370 - 384.

### PROGRAM LOGIC ERROR (nnnn)

REASON: PEARL has detected a condition which makes it impossible to continue processing and still meet your expectations of high data integrity.

ACTION: Make certain that your computer is functioning properly, and that you have a good copy of the PEARL system programs. If the condition still occurs, contact customer support

In the following cases you may take action to correct a situation caused by a PROGRAM LOGIC ERROR message

### 450 INCOMPATIBLE UPDATE MODULE

REASON A request has been made to enter selection data in the Produce Reports program. However, the update control and the report control use a different version of the data dictionary.

ACTION: Use the PEARLDR program to reinstail the REPORT

### 1073 INDEX FILE IS NOT COMPATIBLE

REASON: This situation may occur when you are using the production release of PERSONAL PEARL to process a file created with a pre-release version of the system.

ACTION: Reinstall the form used to update the file with the PEARLDF program. Then use the PEARLFM, menu option 2 to rebuild the index for an existing data file.

# Appendix C

# PERSONAL PEARL Installation Controls

When you enter the PEARLUP command, the INSTALL DAT file is processed. The information in this fite is then available to PERSONAL PEARL during subsequent processing.

If you wish to change some of the controls, you may use a standard word processor to edit the INSTALL DAT file. You must then run the PEARLUP program again to make these controls effective. If you use WORDSTAR to do the editing, be sure to eoit using the using the Non-document option rather than the Document editing option. Changing controls involves technical descriptions and concepts described below. Much of this material sounds very technical. If you need to get into this area, you may wish to consult your dealer or distributor for help

### DISKS=abcdefg

This option specifies which CP/M disk drives will be used for PERSONAL PEARL and your program files.

- a Drive for the system directory (PEARL.DIR). This file contains the directory of all forms defined.
- b Program control data drive is where the program definition files reside (files with the suffix of £00, .M00, .DIR, .S00, and .R00).
- c Program data file drive is the drive on which data files will be placed (files with the suffix of .D00 and .E00).
- d Work drive. This drive is used for temporary work files from time to time. If work file space is required, and there is not enough space on this drive for the work files, you will be instructed to remove the disk currently on the drive and replace it temporarily with a blank diskette. This drive must not be the same drive as the program data file drive (c above) or PEARL will not execute properly.
- e This is the drive on which the help text (PRLHELP.TXT) file resides. If this file is not available during processing, no help text will be available.

- f System drive. This is the logged on CP/M drive during execution. All PEARLXX programs must reside on this drive.
- g Copy source drive This drive is used by PEARLFM during some file maintenance operations. It may be the same as the system drive, but cannot be the same as the program data file drive

### TERMINAL=n1,n2,n3,n4,n5,n6,n7,n8,n9,n10,n11,n12,n13,n14,n15,n16

These values describe the layout of your screen. Except for the parameters described below, these values should not be altered as they are adjusted to fit the screen for your computer.

- n1 The number of lines on the terminal
- n2 The number of columns on the terminal available for defining forms and reports. The maximum value which may be used is 127

### CURSOR=112233445566778899aabbccddee

This parameter list specifies cursor positioning control codes. Any changes that are made here will not be reflected in the control menus on PERSONAL PEARL. The control codes consist of 11 hexadecimal digits. Each digit consists of two characters. No spaces appear in the parameter list.

11	Cursor forward	04-Control D
22	Cursor backward	13-Control S
33	Word forward	06-Control F
44	Word backward	01-Control A
55	Delete backward	7F-RUB or DEL
66	Delete character	07-Control G
<b>7</b> 7	Delete to end of word	14-Control T
88	Not used	EE-Unused
99	Delete line/field	19-Control Y
aa	Insert on/off	16-Control V
bb	Alternate cursor forward	OC-Control L
cc	Alternate cursor back	08-Control H

dd Alternate cursor up 0B-Control E
ee Alternate cursor down 0A-Control J

### DEFINE=112233445566778899aabbccddeeffgghhiijjkk

This parameter list specifies control codes used during the definition of a program entry form or a report. Changes to these codes will not be reflected in the PERSONAL PEARL control key menus.

11	Tab forward	09-Control I
22	Tab backward	1E-Control ^
33	Must be same as cursor bac	k 13-Control S
44	line up	05-Control E
55	line down	18-Control X
66	Scroll up	1A-Control Z
77	Scroll down	17-Control W
88	Return	0D-Control M or RETURN
99	Escape	1B-ESCAPE
aa	Help	11-Control Q
bb	Line insert	0E-Control N
CC	Not used	EE-Unused
øď	Add f.eld	02-Control B
ee	Abandon edit	0F-Control O
ff	Page forward	03-Control C
gg	Page backward	12-Control R
hh	Print screen	10-Control P
ii	Roll current line to top of screen	15-Control U
Ji	Not used	EE-Unused

EE-Unused

Not used

# UPDATE=112233445566778899aabbccddeeffgghhiijjkkll

This parameter list specifies keyboard control codes used during data entry processing. Changes to these codes will not be reflected in the control key menus.

11	Tab forward	09-Control I
22	Tab backward	1E Control A
33	Same as cursor back	13-Control-S
44	Line up	05-Control E
<b>5</b> 5	Line down	18-Control X
<b>6</b> 6	HELP	11-Control Q
77	Not used	EE-Unused
88	Return	0D-Control M or RETURN
99	Page forward	03-Control C
aa	Page back	12-Control R
bb	Toggle ADD/EDIT	02-Control B
cc	Not used	EE-Unused
dd	Print	10-Control P
ee	Delete record	0F-Control O
ff	Unused	EE-unused
<b>g</b> g	Add/rep ace	15-Control U
hh	Get next record	1A-Control Z
ii	Get previous record	17-Control W
ij	Duplicate field from previous record	0E-Control N
kk	Not used	EE-Unused
11	Escape	1B-ESCAPE

# PRINTER=n1,n2,n3



Defines the printer which is being used on the system. This parameter list specifies printer/report characteristics. The list consists of 3 parameters and starts after the word "PRINTER=". Each parameter is followed by a comma ",", and is an integer number. No spaces may appear in this parameter list.

- n1 is the width of the printed page in columns.
- n2 Is the number of lines per page, or zero if the printer is equipped with form feed control (CHAR (12)).
- n3 Is the number of data output lines to print before sk pping to top of the next page.

#### DATE=n

- 0 Use the mmddyy format for dates
- 1 Use the dommyy format for dates,

#### GDIAG~o



GDIAG=C Conso.e.

GDIAG=P System printer.

# CHARR= Llhh

This parameter list specifies the range of characters that may be entered by the operator in defining report, entry forms, and entering data into the completed program. This set of characters does not include other sets involved with "control keys". The parameter list consists of two hexadecimal digits (each two characters). The first is the low character, the second is the high character. The list follows "CHARR=".

- It is the low character value. Default = "20", space.
- hh Is the high character value. Default = "7E", a tilte.

#### SCREENS=



This parameter indicates that a list of terminal attributes is to follow. The SCREENS= section must appear at the end of the INSTALL definition file. Each terminal defined in this section wil. appear on the selection menu during PEARLUP processing. If the definition for only one terminal appears, that

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# Appendix D

# Setting Up Production Program Disk

During the design and development phase, it is convenient to keep all of the PERSONAL PEARL definition and development data files on a single work or development diskette. This enables you to make a change to a form or report, use the reinstall function, and then to test the changes with a minimum amount of swapping diskettes. However once you are ready to enter data into your data files on a production basis, it is advisable to set up a production configuration for your program diskettes. There are three reasons for this:

- To allow you to make changes to forms and reports in the future without impacting your production data files. These changes can be made using the development files independent of your production files, and then if the changes are satisfactory, they can be transferred to your production files.
- To maintain several data files on separate diskettes, each of which uses the same input form for data entry.
- To get the maximum number of data records on a file. Several of the files
  created during the design of forms and reports do not need to be available
  when the Enter Data and/or the Produce Reports programs are used. By
  setting your diskettes up in a production configuration you can use all of
  the space on the diskette for data files.

This appendix describes some of the details pertinent to a production configuration. The actual steps required for the configuration of a production disks are described in the chapter on use of the File Maintenance services, and in the advanced tutorial.

The topics discussed are as follows:

- 1. A summary of the files created and processed by PERSONAL PEARL.
- The concept of DEVELOPMENT and PRODUCTION DISKETTES.
- 3. Required program file configuration.
- How to reset the computer disk drive setup for program files.
- 5. Sample program diskette configurations.

You may also need to refer to Appendix C which describes the manner in which disk drives are allocated by PERSONAL PEARL.

# 1. FILE TYPES USED BY PERSONAL PEARL.

The function and content of the disk files created by PERSONAL PEARL are described below. (The "\*" signifies that the file is required to operate the program units in its final production phase. When the words "form" or "report" appear as part of the file name, they represent the actual form or report name entered by the user of PERSONAL PEARL.)

File name	Description
PEARL.DIR *	This file is created by PERSONAL PEARL and contains the directory of ail the program units or form names that you have defined.
form.S00	This file contains all the information that you have made in designing your entry form.
form.D00 *	This file contains all the data that you will enter when you use the entry form. This is also referred to as the data file.
form.E00 *	This file is the data index. It also contains data that you enter using your entry form also known as the data file index.
form.DIR *	This is the program unit report directory. It contains the names and descriptions of all the reports that you have defined for a given program unit or form.
report.R00	This file contains your definitions for a report.
form.L00 *	This file is required in order to enter data into your entry form.
report.M00 *	This file is required in order to print a report that you have defined.
form.Q00 form.K00 form.T00 form.V00 form.P00 form.F00	These files are temporary files used by PERSONAL PEARL from time to time, and are normally deleted from the diskette after they have served their purpose. If they appear on your directory, you may delete them at any time without loss of any of the data you have entered.

#### 2. THE CONCEPT OF DEVELOPMENT AND PRODUCTION DISKS.

Although PERSONAL PEARL allows the creation of programs that are ready to operate in a matter of a few minutes, most created programs will require some form of testing and revision. This is especially true when more than one person will use the created program.

To facilitate the revision of a program without halting its use by others, the created program should be set up on two types of diskettes:

- The DEVELOPMENT DISKETTE: This disk is the program diskette on which testing and revision of the created program is to occur.
- b. The PRODUCTION DISKETTE: This diskette to be used as the production copy of the program

To transfer the revisions made on the DEVELOPMENT DISKETTE onto the PRODUCTION DISKETTE requires the use of the PERSONAL PEARL file maintenance service (PEARLFM).

To initially set up a PRODUCTION DISKETTE, you should first format a new diskette. You may then either copy the DEVELOPMENT DISKETTE onto the PRODUCTION DISKETTE or use the "TRANSFER PROGRAM FILES" service option on the FILE MAINTENANCE menu.

# 3. REQUIRED PROGRAM FILE CONFIGURATION.

This section will set forth the mandatory configuration of program unit files in order to operate the programs you created. The term "configuration" is used to describe the groups of files that must be on the same diskette, and those that can be on a separate diskette. You will be able to rearrange the program files in any way you choose without affecting their operation as long as you follow the configuration rules set forth below.

Any given program unit you develop will result in the creation of three to more than eight files on the program diskette. There is a maximum of three separate diskettes on which any one set of program unit files can be grouped. Given that your program unit form name is "formx" these groups are:

# DEVELOPMENT DISKETTE configuration.

Group	Files	
a	PEARL DIR	This is the program directory.
b	formx.S00	This is the FORM definition file.
	formx DIR report R00 formx L00 report.M00	This is the program unit report directory. This is the report definition file. This is the form update file. This is the report production file.
c	formx D00 formx.E00	This is the form data file. This is the index file.

# PRODUCTION DISKETTE configuration.

Group	Files	
а	PEARL DIR	This is the program directory.
b	formx DIR	This is the program unit report directory.
	formx.L00 report M00	This is the form update file. This is the report production file.
С	formx.D00 formx.E00	This is the form data file. This is the index file.

# NOTE

If groups "a" and "b" reside on the same disk drive, then they must reside on the same diskette.

You may also delete "formx L00" from group "b" on a production disk if only reports are to be produced on the data file.

If you have developed a program that consists of more than one form or program unit, then you should combine all similar files together. In other words, you should combine all the program data and program index files on the same disk, and all the program report directories, data update files, and report production files together on the same disk.

# For example.

If you designed a program unit that consists of a form called MASTER, and another called ADDRESS where both are required to be processed at the same time, then the development diskette should have the following configuration:

Group	Files	
а	PEARL DIR	
ь	MASTER.DIR ADDRESS DIR MASTER L00 ADDRESS L00 REPORT1.R00 REPORT2 R00 REPORT3 R00 REPORT1.M00 REPORT2 M00 REPORT3 M00	This is a MASTER program unit report. This is another MASTER program unit report This is an ADDRESS program unit report
c	MASTER.D00 MASTER E00 ADDRESS D00 ADDRESS.E00	

# HOW TO RESET THE COMPUTER DISK DRIVE SET UP FOR PROGRAM FILES.

PERSONAL PEARL is initially setup to operate on two computer disk drives. Since your operating system is CP/M, then these two disk drives are "A", and "B", respectively. This is called the initial disk drive configuration where the PERSONAL PEARL disk drive is "A" and the program disk drive is "B".

This configuration requires that there be only one program diskette for a given program or set of programs. This set up is ideal for development because it minimizes development time. However, this setup may not be ideal for production purposes. The overriding limiting factor on a computer is the capacity or storage space available on a diskette during production processing.

The opposite may be true for a computer with a hard disk. In this case, only one disk drive may be necessary for development and production purposes.

PERSONAL PEARL provides the operator with an option to reconfigure the program diskettes on the available computer disk drives to satisfy the particular needs of the computer or the program that is developed (see Appendix C on PERSONAL PEARL INSTALLATION CONTROL DATA).

PERSONAL PEARL provides for a maximum of three computer disk drives for the placement or configuration of the program files. In order to change the disk drive designations from those that were present when you purchased the PERSONAL PEARL package, you must edit the "DISKS=abcdefg" section of the INSTALL.DAT file first and then PEARLUP PERSONAL PEARL, again.

#### 5. SAMPLE PROGRAM DISKETTE CONFIGURATIONS.

This section will illustrate four program diskette configurations. These configurations are not mandatory but are suggested. These configurations will work for development and production program disks. The configurations discussed will also have computer disk drive and program diskette designations.

References to "Program disk #1" and "Program disk #2", correspond to the PROGRAM SUPPORT DISKETTE and the PROGRAM DATA DISKETTE, respectively.

a. PERSONAL PEARL standard program file configuration.

This configuration consists of one diskette for the program files.

The installation control file (INSTALL.DAT) has a disk designation as follows:

#### DISKS=BBBAAAA

Computer Disk Drive	Diskette Name	File	Description
В	Program disk	PEARL.DIR	program directory
В	Program disk	form.S00	FORM definition file
В	Program disk	form D1R	form report directory
8	Program disk	report R00	report delinition file
В	Program disk	form.L00	form update file
В	Program disk	report M00	report production file
В	Program disk	form.D00	form data file
В	Program disk	form.E00	Index file

 PERSONAL PEARL standard program file configuration with two program diskettes

The installation control file (INSTALL.DAT) has a disk designation as follows:

#### DISKS=BBBAAAA

Computer Disk Drive	Diskette Name	File	Description
В	Program disk #1	PEARL DIR	program directory
В	Program disk #1	form.S00	FORM definition file
В	Program disk #1	form DIR	form report directory
В	Program disk #1	report.R00	report definition file
В	Program disk #1	form L00	form update file
В	Program disk #1	report.M00	report production file
В	Program disk #2	form D00	form data file
В	Program disk #2	form.E00	index fle

 Program file configuration with two program diskettes on two computer disk drives.

The installation control file (INSTALL.DAT) has a disk designation as follows:

# DISKS=AABAAAA

Note that the Program disk #1 is the same as the PERSONAL PEARL system diskette. This is possible if you have enough room on the system disk. This configuration is most practical when the program is in production mode where only the ENTER DATA and PRODUCE REPORTS functions of PERSONAL PEARL are needed on the system diskette. This configuration is not suitable for single-density systems.

Computer Disk Drive	Diskette Name	File	Description
Α	Program disk #1	PEARL.DIR	program directory
A A A A B B	Program disk #1 Program disk #1 Program disk #1 Program disk #1 Program disk #1 Program disk #2 Program disk #2	form.S00 form.DIR report.R00 form.L00 report M00 form D00 form.E00	FORM definition file form report directory report definition file form update file report production file form data file index file

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d. Program file configuration with three program diskettes on three computer disk dr.ves.

The installation control file (INSTALL.DAT) has a disk designation as follows:

# DISKS=AGBAAAA

Computer Disk Drive	Diskette Name	File	Description
Α	Directory disk	PEARL.DIR	program directory
G	Program disk #1	form \$00	FORM definition file
G	Program disk #1	form DIR	form report directory
G	Program disk #1	report.R00	report definition file
G	Program disk #1	form L00	form update file
G	Program disk #1	report M00	report production file
В	Program disk #2	form D00	form data file
В	Program disk #2	form.E00	index f.le

# Appendix E

# General File Maintenance Procedures

File Maintenance, as the term "maintenance" implies, involves operations that are performed periodically on your data files. They are necessary in order to obtain maximum performance from the combined use of your computer, PERSONAL PEARL and your personal data files

File maintenance is provided in part through the use of CP/M utilities and in part through the use of the PERSONAL PEARL file maintenance (PEARLFM) program. Discussion of some CP/M commands may be found in Chapter 6, and Chapter 5 contains procedures for initiating file maintenance

This discussion of file maintenance is divided into four sections:

- 1. A summary of the file maintenance functions, and why you need them.
- 2. A description of the PERSONAL PEARL file organization.
- A description of how PERSONAL PEARL data files can be configured on your system to maximize disk storage utilization for your computer.
- A detailed description of how to use each function provided by the PEARLEM program.

If you are just beginning to to use PERSONAL PEARL, you will probably want to scan the first section, and bypass the other sections for now. Once you become familiar with the use of the system, you may need to return to the detailed description of each function its usefulness for your situation becomes evident.

#### 1. FILE MAINTENANCE, SUMMARY DESCRIPTION

The operations covered in this section are:

a. Configuring your data files to be able to store the maximum amount of data on a single diskette. During development of a program, there are a number of files which are necessary to Design Forms and to Design Reports, but which are not required in order to Enter Data and to Produce Reports.

- b. The steps required to change the design of your form or reports after you have entered some data on your data file. For example in your original form you did not include the Phone Number. After you created your data file, and filled out a number of forms, you realized that you really need to have the phone number on your form. There are several steps required in order to change and install a new form and to use the data from the forms you have already filled out.
- Making backup copies of your data files.
- d. Making multiple data files using the same input form. For example, if you want to create more than one file of names and addresses using the same input form.
- e. Recovering and verifying the integrity of your data after a system failure has occurred. This may be necessary, for example, if the power to your computer is lost during the Enter Data operation, and your data files were not closed properly. (During the close operation, information which is in the memory of your computer is written to diskette to complete a permanent record.)
- f. Copying a data file to compact the data. When you delete or edit forms on your data file, some space may be left unused on your data file diskette. The copy function provided by the PEARLFM program will compact your data file by only copying the data which is active on your file.

# 2. PEARL FILE ORGANIZATION

a. Disk Drive Names.

The disk drive on which a file will be expected to be found or will be placed is specified in the INSTALL.DAT file by the DISKS-abcdefg specification. The following is a description of the values provided as defaults in the distribution system. (Also see Appendix C for additional description of the DISKS- and how to alter the disk drive specifications on your system.)

a (B) System Directory

The PEARL.DIR is placed on this drive.

b (B) Form and report control

The form.S00, form.L00, report R00 and report.M00 files are placed on this drive. Also, miscellaneous temporary work

files are placed on this drive during INSTALL forms and reports processing.

c (B) Data file drive

The form.D00 and form.E00 files are placed on this drive.

d (A) System drive

This is the drive containing the PEARLxx program files. This must always be the logged in drive. The PEARL.A00 system configuration data file must also be located on this drive.

e (A) Sort Work drive

This is the drive containing the PSORT program and which is used for sort work files during sorts.

f (A) The HELP text drive.

This is the drive on which the PEARLXX programs will look for the PRLHELP.TXT file.

g (A) COPY SOURCE

This is the drive on which the source data file will be placed during the file compress and copy operations performed by the PEARLFM program.

The following is a discussion of the files created by PERSONAL PEARL during the Design Forms, Design Reports, and Enter Data operations. In the following discussion, a basic understanding of the naming conventions used by CP/M is assumed.

b. PERSONAL PEARL Directory.

The PEARL.DIR file contains the directory of all of the forms you have defined. This file is expected to be on the system control file diskette by all PEARL programs.

c. Design Forms.

When you design a form, a Source Form file is created. The name of the file is formx.S00 where formx is the name of the form you have created. This file is required only when you change the design of the original form, and when you select the option to INSTALL a FORM.

During the NSTALL FORM process, three additional files are created.

form.L00 (Update control file.)

form.D00 (Form Data file and data dictionary.)

form.E00 (Index file)

The update control file is required in order to Enter Data into your form file. It is also used to provide you with a screen in which to enter low and high values for selection during Produce Reports.

The Form Data fi.e and data dictionary is the file on which the data you enter into your form is placed. This file also contains a data dictionary at the beginning of the file. The data dictionary contains a table of the input areas you have dentified on your form during the design.

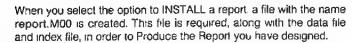
If you use the option to reference data from other forms, the data dictionary is used during the INSTALL FORM or INSTALL REPORT process to locate the data from the other forms. The data dictionary is also used when you INSTALL a REPORT to verify that the input area names you have used in your report actually exist on your data file.

The Index file is not used until you actually enter data into the forms you have designed. It contains a table which is used to locate the data for each form in the data file based on the value of the input areas you have selected as reference areas during the design of your form.

When data from your input form is stored on the Form Data file, data is compressed. For example, if in the design of your form you allocate three 50 character fields in which to place an address, but in most cases you only use an average of 20 characters on the first two lines for the address, only the data you enter will be placed in the Form Data file. You need not worry about using space on your diskette for an input area on your input form unless you actually enter data into the input area.

# d. Design Reports.

When you design a report, a Source Report file is created. The name of the file is report.R00 where report is the name of the report created. This file is required only when you change the design of the original report, and when you select the option to INSTALL a REPORT. In addition, a directory of the reports you have defined for a form is maintained in the form.DIR file.



#### f, Enter Data

During Enter Data processing, the form.L00 file is read into memory from the diskette on the control file drive.

The PEARLED program then checks to see if the form.D00 file is on the diskette on the data file drive. If it is not, you will be requested to place the diskette with the data file on the data file drive.

As data is entered into the forms, the form.D00 and form.E00 files will be updated with the data you enter

#### g. Produce Reports

During Produce Reports processing, the report.M00 is read from the control file drive. If you select to set selection control, the form.L00 file will also be read into memory. The form.DIR file is also used to obtain the directory of reports you have defined.

At the time you request to create the report, a check will be made to see if the data file can be located on the diskette on the data file drive. If it cannot be located, you will be requested to insert the diskette containing the data files.

If a sort is required in order to produce the report, you will be requested to place the sort diskette on the sort work drive. During the sort, a sorted output file is created. If the sorted output file will not fit on the same diskette as the input file, you will be requested to place a blank work diskette on the data file drive. The sorted data file will then be placed on this diskette. The name of the sorted output file is form. F00. This file is read in place of the form. D00 file when the report is produced.

# h. File Maintenance

A full description of the placement of files during File Maintenance processing is provided in section 4

#### 3. MAXIMIZING DATA STORAGE

During design and testing of designed reports, you will probably want to place al. control files as well as test data files on the same diskette. However, in order to max mize the number of forms which can be placed on a single diskette, you may want to reconfigure files for production processing Your goal in doing this will be to move the data file and data file index to a separate diskette.

The following is an example of how a system may be reconfigured for production processing.

Initially you will have a single diskette which will be referred to as the development diskette. This diskette contains the PEARL directory, the source files for the screens and reports you have developed, the run time control files for Enter Data and Produce Reports, and your test data files.

Your goal will be to set up two diskettes to be used for production processing. These diskettes will be referred to as the program diskette and the data diskette. You will use a combination of the PIP CP/M utility program, and the PEARLEM program to accomplish this. Initially, both the program and data diskette should be blank formatted diskettes. Also make sure that, your development diskette has a copy of PIP.COM and also has a CP/M operating system on it.

In the following procedure, the assumption is made that your system contains two disk drives which are drive A and B.

a. Setting Up the Program Diskette.

Place the development diskette on drive A and boot up your system, or press ctrl/C.

Place the blank program diskette in drive B.

Enter the following commands:

PIP B:=A:\*.DIR (to transfer directory files)

PIP B:=A:\*.L00 (to transfer update control file)

PIP B:=A:\*.M00 (to transfer report control files)
Or follow the steeps outlined in Chapter 5, option 6.

b. Setting Up the Data Diskette.

Place the PEARL FILE MAINTENANCE diskette in drive A.

Place the development diskette in drive B.

Enter the command:

#### **PEARLEM**

When the directory appears, enter the name of the program you are setting up for production

When the file maintenance service directory appears, select option number 4.

You will then be requested to place the data diskette on drive A

At this time, a copy of the Form Data file (form.D00) and the data file index (form.E00) will be copied from the development diskette on drive B to the program diskette on drive A.

You will then be requested to insert the file maintenance diskette back into drive A, and the file maintenance menu will appear again. At this time, the setup of your production diskettes is complete unless the program you are configuring references other forms during update and report processing. In the latter case, return to the form directory and repeat the process for each program name in the set of related forms.

In order to use the program and data diskette you have set up, simply place the program diskette in drive B when you use the PEARLED and PEARLPR programs. You will be requested to insert the data diskette in drive B each time this diskette is required for file update or report processing.

# 4. FILE MAINTENANCE FUNCTIONS

In addition to the function described above, the PEARLFM program provides several other services which are described below:

# a. Fite Summary Statistics

The summary statistics, option 1 on the File Maintenance Service Menu, provides the following information:

SUMMARY FILE DATA FOR: xxxxxxx.D00,

This is the CP/M name assigned to the data file.

#### NUMBER OF RECORDS =nnnn

This is the number of forms currently on the file. If a system failure occurred during an update process, this will probably be the number of forms at the time the update process started, and will not reflect new records added prior to the failure.

#### FILE VERSION NUMBER=nnnn

This is the number of times the form has been installed.

#### NUMBER OF DATA FIELDS=nnn

This is the number of input areas on the screen which are currently active.

#### SPACE AVAILABLE IN DATA DICTIONARY=nnnn

This is the number of bytes (characters) available for expansion of the data dictionary. New input areas may be defined on the input form until this space is exhausted.

#### SPACE REMAINING ON DISK=nnnn

This number times 1024 is the number of bytes which are available for expansion of the data on the data disk. This same information may be obtained through the use of the CP/M STAT utility.

# UNUSED SPACE=nn

This number times 1024 is the number of bytes which are unused on the data file due to the deletion of data records,

# DATA FILE SIZE=nnnn

This number times 1024 is the number of bytes which have been used on the data file for the form. This includes the space for the data dictionary which may require 4-12K when the form is initially installed depending upon the number of input areas on the input form.

# b. Rebuild File Index

Rebuilding an index for a data file, option 2 on the File Maintenance Service Menu, is required if the integrity of the index has been lost due to a system or power failure during Enter Data processing, or if you have redesigned your form and have added or deleted reference fields to the form.

This process may take awhile if you have a large number of forms in your data file (say 500 to several thousand or more). The processing time will also increase based on the number of reference fields you have defined on your input form. During processing, an indicator of the amount of time remaining to process will be displayed on your screen. This is the percentage of processing yet to be completed. It will begin at 100 and will count down to zero.

# c. Copy/Compact Data File

In order to compress a data file, select option 3 on the File Maintenance Service menu. You will want to use this option periodically to recover space on your data file which is unavailable for use due to deletion and eciting of forms. (The amount of space you will gain is indicated in the UNUSED SPACE line of the summary file data report described above.)

When you have selected this option, PEARLFM will check to see if the COPY SOURCE DRIVE and DATA FILE DRIVE (refer to the discussion of DISK DRIVE ASSIGNMENTS in Section 1 above) are assigned to the same drive. If they are, the compressed copy of the data file will be created on the DATA DISK. (This option should apply only if your data files are placed on a HARD DISK, and cannot be moved.) If they are not the same, you will be requested to place the data diskette in the drive specified by the COPY SOURCE drive. At this time you should make sure also that you have a blank formatted diskette in the DATA FILE DRIVE. (If a file which has the same name as the file you are copying exists on this disketted, that file will be deleted during the copy operation.)

Depending upon your system disk drive assignments, you may be requested to insert the File Maintenance diskette after the copy is completed.

After the data file has been copied and compressed, a new index will automatically be built for the compressed file.

The copy and the index rebuild process may take a few minutes, depending upon the size of your data files. In both cases, a count-down of the percentage of the process which is to be completed is provided.

#### d. Create Data File

This service will create a blank data file into which you may enter data.

This service will be requested by other procedures in the manual or when the following situations occur:

Your data file (generally on a production diskette) may become too large because you have approached the maximum number of records or forms that can be stored on it. In this case, a new data file on a separate disk can be created.

Note that using this process will allow you to re-initialize a single file in a set of files without changing the other files during the process. This would be convenient in the case where one of the files on your program disk is a MASTER file containing data needed from one month to the next. The other file is a transaction file containing only those transactions occurring during the month, and you want to create a new transaction file at the beginning of each month.

You may want to set up a production diskette from a development diskette. Generally, a program is tested with real data before it is actually used in production (production mode). This is done by adding records or forms to the data file, and checking the results. This service will get rid of all the test data that was added.

#### e Transfer Form Changes

This service is used to update or transfer changes made to the form from the development diskette to the production diskette. This transfer effects only the data file and does not effect any data added to the data file. If a data file is not found on the production diskette (or on the diskette in the program disk drive), then processing will terminate without completing properly, so be sure that your production and your development diskette each contain the data file for the program to which you have made changes. Once this service has been completed, you must also transfer the program update file (file type of .L00) onto the production diskette using service option 6 (TRANSFER PROGRAM FILES).

This service requires two disk crives on the computer.

In order to use this service you must first place the production diskette (object disk) on the program disk drive (usually drive B) and

then select Service 5 (TRANSFER FORM CHANGES). During the process of transfer, you will be asked to place the development diskette on disk drive "A" (or another disk work drive) temporarily.

This service will only transfer changes made on one form at a time. If you need to transfer changes made on other disks, then you must return to the FORM DIRECTORY menu and select the other programs that need the transfer of FORM changes.

# f. Transfer Program Files

This service will transfer program files from one disk to another. It is most helpful when setting up a production disk, or when a transfer of changes made on the development disk to the production disk is required.

This service requires two disk drives on your computer.

In order to use this service, you must first place the production diskette (object disk) on the program disk drive (or drive B), then select Service 6 (TRANSFER PROGRAM FILES) During the process of transfer, you will be asked to place the development diskette on disk drive "A" (or another disk work drive) temporarly.

This service will only transfer files defined for one form or program at a time.

# Appendix F

# Control Key Commands and Menu Prompts

# **DESIGN FORMS**

DESIGN FORMS - Form Layout

```
FORM LAYOUT - CONTROL KEY COMMANDS

F - Word forward V - Insert char N - Insert line
A - Word back G - Erase char Z - Scroll up
C - Page forward T - Erase word W - Scroll down
R - Page back Y - Erase line O - Ignore & exit
Q - HELP U - Line to top ESC - Save & exit
```

PAGE: 1 LINE: 1 COL: 1 AREA NAME:

ctri/F	Word forward moves the cursor to the beginning of the next group of characters which is preceded by a space or a punctuation mark
ctrl/A	Word back moves the cursor to the beginning of the group of characters before (to the left of) the current cursor position.
ctrl/C	Page forward if the input form extends beyond the bottom of the screen, this command will move the form up one screen.
ctrl/R	Page back if the input form extends beyond the top of the screen, this command will move the form down one screen.
Q	Help when a Q is entered with the cursor in column one, the help message for this menu is displayed.
ctrl/V	Insert character this command toggles the insert mode off and on. When in the insert mode, input characters will be inserted at the current cursor position.

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ctrl/G	Delete character this command will delete the character at the current cursor position.	
ctrl/T	Delete word this command will delete the word at the current cursor position,	
ctrl/U	Move current line to top. This command will move the current line to the top of the screen to continue entry.	
ctrl/Y	Delete line this command will delete the current line (to the left and right of the current cursor position).	
ctrl/N	Insert line this command will insert a line at the current cursor position.	
ctrl/Z	Scroll up this command will shift the form up one line.	
ctrl/W	Scroll down this command will shift the form down one ine.	
ctrl/O	Ignore & Exit this command will leave the form as it was before any changes were made and exit to the design forms menu	
ESCape	Save & Exit this command will save the changes made to the form and exit to the design forms menu.	
PAGE:	n this indicates the page of the form currently being displayed.	*
LINE:	nn this indicates the line of the current page of the form being displayed on which the cursor is placed.	W
COL:	nn this indicates the column of current cursor position.	
NAME:	This indicates that the cursor is positioned on the form in a data input area which has been defined to have the name shown. If no name is d'splayed, then none has yet been defined.	

# **DESIGN FORMS - Data Input Areas**

F - Word forward B - Define data input area
A - Word back Z - Scroll up
C - Page forward W - Scroll down
R - Page back O - Ignore & exit
Q - Help ESC - Save & exit

PAGE: 1 LINE: 1 COL: 1 AREA NAME:

The control key commands in this menu have the same functions as in the form layout menu. One additional command is provided:

ctrl/B

Define data input area. This command is executed when the cursor is positioned to a data area which is to be defined. When performed, the ctr./B command will cause the Data Input Area Definition menu to be displayed. If the cursor is not positioned on a valid area of the form for defining a data area, a message will be displayed.

DATA INPUT AREA DEFINITION	
NAME THE DATA INPUT AREA HERE:	
IS INPUT REQUIRED? (Y/N) _ TYPE OF INPUT?	(C/D/N) _
C=Letters/Numbers, D=Date, N=Numbers (comp	utations)
FORMULA FOR COMPUTATION OF INPUT COPTIONAL	١.

The data input area definition menu relates to a particular area on the form. In this menu you will name and specify the attributes of a data area.

NAME THE DATA INPUT AREA HERE: \_\_\_\_\_

This input is required and must be a name of up to 7 letters or digits. This will be the name used to refer to this data area when designing reports and when referencing the data input area from other forms.

IS INPUT REQUIRED? (Y/N) \_

A response of Y)es or N)o is required here. If the question is skipped, the default will be No. If the response is Y, when entering data on the finished form, the user will be required to enter data into the area before adding the record to the file.

TYPE OF INPUT? \_

This input will specify the kind of data to be entered into the area. "C" areas will accept letters and digits and some punctuation. "D" areas will accept only valid dates. "N" areas will accept numbers only for computations.

FORMULA	FOR	COMPUTATION	0F	INPUT	(OPTIONAL	.):	 _

This input applies only to type N)umber input areas, and is optional for them if a computation is entered here, the data stored in the area being defined will be computed based on the formula enterd. Refer to Chapter 3 for detailed rules and examples of computations.

Other permissible inputs:

Q for HELP explanation about this menu.

ESCape to exit from the menu. The inputs you have made will be saved and PERSONAL PEARL will return to the data input areas menu.

**DESIGN FORMS - Index for Finding Records** 

The control key commands in this menu have the same functions as in the form layout menu. One additional command is provided.

ctrl/B Select data input area. This command is executed when the cursor is positroned to a data input area which is to be defined as an index for the form. When performed, the ctrl/B command will cause the Building the Index menu to be displayed. If the cursor is not positroned on a valid area of the form for defining a data area, a message will be displayed.

```
BUILDING THE INDEX
WILL YOU USE THIS AREA TO IDENTIFY AND FIND
INDIVIDUAL RECORDS? (Y/N) Y
```

WILL DATA IN THIS AREA UNIQUELY IDENTIFY ONE RECORD IN THIS FILE? (Y/N)  $\gamma$ 

The building the index menu relates to a particular area on the form. The answers to the questions will specify the index attributes of the data area



WILL YOU USE THIS AREA TO IDENTIFY AND FIND INDIVIDUAL RECORDS? (Y/N) \_

If you reply N)o to this question the area is not set to be an index, and you will return to the Index for Finding Records menu. An answer of Y)es will make the data input area an index for the form.

WILL DATA IN THIS AREA IDENTIFY ONE RECORD IN THIS FILE? (Y/N) -

This question will determ ne whether the index is to be unique on not. A unique index will allow only one occurrence of any particular value. A nonunique index will allow multiple occurrences.

You can return to the index for finding records menu by entering an ESCape.

#### **DESIGN FORMS - Data From Other Forms**



DATA FROM OTHER FORMS - CONTROL KEY COMMANDS
F - Forward to area 8 - Select data input area
A - Back to area Z - Scroll up
C - Page forward W - Scroll down
R - Page back 0 - Ignore & exit

Q - HELP ESC - Save & exit

PAGE: 1 LINE: 1 COL: 1 AREA NAME:

The control key commands in this menu have the same functions as in the form layout menu. One additional command is provided.

ctrl/B

Select data input area. This command is executed when the cursor is positioned to a data input area which is to be defined as being sent from another form. When performed, the ctrl/B command will cause the Using Data From Another Form menu to be displayed. If the cursor is not positioned on a valid area of the form for defining a data input area, a message will be displayed.

**DESIGN FORMS - Using Data From Another Form** 

USING DATA FROM ANOTHER FORM
WHAT IS THE OTHER FORM NAME?
WILL DATA IN THIS AREA IDENTIFY AND LINK ANOTHER FORM? (Y/N) _
IS DATA FROM THE OTHER FORM BROUGHT INTO THIS
AREA FOR DISPLAY (NLY? (Y/N)

The using data from another form menu relates to the input area name displayed in the last line of the menu. The responses to the questions will specify that the data input area is to be sent from another form, how the other form will be contacted, and how the data will be handled once it has been received.

WHAT IS THE OTHER FORM NAME? \_\_\_\_\_

This question identifies the source of the shared information.

WILL DATA IN THIS AREA IDENTIFY AND LINK ANOTHER FORM? (Y/N)...

If you reply Y)es to this question, the data area will be used as the contact key for selecting the record from the sending (external) form. Only one identifying area is used to access the external form. If more than one data area is to be sent from the other form, one and only one area should be specified as the identifying data area. If the data area is not to be used as the identifying area, answer N)o, and the next question will be answered.

IS DATA FROM THE OTHER FORM BROUGHT INTO THIS AREA FOR DISPLAY ONLY? (Y/N) \_

A response to this question of Y)es will cause the data to be displayed as it currently exists on the sending external form. A response of N)o will move the data as it exists when the current form is added and keep it in the current form as it is. If the data is subsequently changed on the sending form, the data will remain as it was in the current form.

A response of N)o might be used to set a price for a sales transact on by accessing a catalog form. Then, when the price changes in the catalog, it will remain in the sales transaction as it was when the transact on was entered.

# **DESIGN REPORTS**

### **DESIGN REPORTS - Report Layout**

```
REPORT LAYOUT - CONTROL KEY COMMANOS

F - Word forward V - Insert char N - Insert line
A - Word back G - Erase char Z - Scroll up
C - (G) forw'd T - Erase word W - Scroll down
R - (G) back Y - Erase line O - Ignore & exit
Q - HELP U - Line to top ESC - Save & exit

PAGE: LINE: 1 COL: 1 AREA NAME:
```

The control key commands on the report layout menu are identical in function to those used in the form layout menu with the exception of ctrl/C and ctrl/R During layout of a LIST-type report, the lower left-hand corner of the report layout menu is the report line group to which the line at the current cursor position belongs. In the case of the above menu, the group is HEADING. The groups are HEADING, DETAIL, SUBTOTAL, TOTAL and FOOTING.

Depression of ctrl/C will change report line groups. A series of ctrl/C's will cycle through the groups

```
ctrl/C where (G) = page forward for FIXED-type reports.

where (G) = group forward for LIST-type reports.

ctrl/R where (G) = page back for FIXED-type reports where (G) = group back for LIST-type reports.
```

# **DESIGN REPORTS - Data Output Areas**

```
DATA OUTPUT AREAS - CONTROL KEY COMMANDS

F - Word forward B - Define data output area

A - Word back Z - Scroll up

C - (G) forward W - Scroll down

R - (G) back 0 - Ignore & exit

Q - HELP ESC - Save & exit

PAGE: LINE: 1 COL: 1 AREA NAME:
```

The control key commands on the report layout menu are identical in function to those used in the form layout. Refer to the form layout menu described above for details. One additional command is provided.

ctrl/B

Define data output area - this command will select the data output area at the current cursor position for definition. When executed, this command will cause the Data Output Area Definition menu to be displayed.

# **DESIGN REPORTS - Data Output Area Definition**

DATA OUTPUT AREA DEFINITION	
NAME THE DATA OUTPUT AREA HERE:	
FORMULA FOR COMPUTATION OF OUTPUT (OPTIONAL):	

The data output area name will be either a character or date type area already defined on a form or it will be a number area. If it is a number area, it may be already defined on a form or it will be calculated from other areas which are defined on a form. If the data area named is already defined on a form, no computation should be entered. If the data output area is not already defined on a form then a computation must be entered.

**DESIGN REPORTS - Sort Priority** 

Enter R below area name to reverse order Press RETURN to continue, Q for HELP, or ESC to EXIT



In this menu sort priority for the report is defined if no input area names are entered, then the report will appear in the order in which the data was entered Up to 5 areas may be specified. The first area has priority over the second, the second over the third and so on. To have priority means that the report will be sequenced on area 1 first if several records have the same value for area 1, then they will be subsequenced by area 2. Further, if several records have the same value for areas 1 and 2, then they will be subsequenced by area 3 and so on.

For each area, an 'R' may be entered directly below the area name to indicate that the sort order is to be reversed

Note also that the first sort area is used to control subtotals on reports

# **DESIGN REPORTS - Data From Other Forms**

PAGE: LINE: 1 COL: 1 AREA NAME:

The control key commands shown for the data from other forms menu perform exactly like those in the form layout menu. Refer to the control key commands section on that menu, for more details. One additional command is provided.

ctrl/B

Select data output area this command will cause the Using Data From Other Forms menu to be displayed with reference to the data area at the current cursor position

# **DESIGN REPORTS - Using Data From Another Form**

USING DATA FROM ANOTHER FORM	
WHAT IS THE OTHER FORM NAME?	
DOES DATA IN THIS AREA IDENTIFY RECORDS FROM	

WHAT IS THE OTHER FORM NAME? \_\_\_\_\_

This is the name of the form which will send the data to the report.

DOES DATA IN THIS AREA IDENTIFY RECORDS FROM ANOTHER FORM? (Y/N) \_

If this question is answered Y)es, then the data area will be used as the contact key for identifying the record from which to access the information. The data area must have been defined as an index on the sending form. Only one contact key should be defined for identifying the record from the sending form If this question is answered N)o, then some other data area must be specified as the contact key.

# ENTER DATA ENTER DATA - Control Key Commands

Additional control key commands are:

S or H = Cursor Left C - Page forward
D or L = Cursor right R = Page back
E or K = Cursor up ^ - Tab back
X or J = Cursor down

Press RETURN for next page or ESC to exit from HELP processing.  $\label{eq:processing} % \begin{array}{c} P_{\rm c}(x) & P_{\rm c}(x) \\ P_{\rm c}(x) & P_{\rm c}(x) \\$ 

ctrl/U

Save/Replace record this command will store the data from the form displayed on the screen to the file. If you are in ADD mode, the record will be added to the file. If you are in EDIT mode, the record will be replaced. If the data does not satisfy the design of the form (that is, if required data is missing or if number data is invalid or some other condition holds), the record will not be added and a message displayed. You can then remedy the situation and try a ctrl/J again. This function is also performed when the form is completely filled in and a return is done.

ctrl/B

Change back and forth to ADD or EDIT mode this command will change modes. After a ctrl/B, the execution of ctrl/U will add new gata to the file.

When in EDIT mode, an empty form is displayed, and you are prompted for a key. Move the cursor to any data area which has been defined as an index for finding records, enter some data and press return. The index will be used to retrieve the record for that key (or within a range if you simply typed a single character or number). If no record exists with that key, then the next record in the index will be returned. That record will be displayed. Next, you may edit the form

ctrl/P

Print current record this command will output the form as displayed on the screen to the printer

ctrl/N

Duplicate last item this command will duplicate the data from the previous entry for the data area at the current cursor position.

ctrl/E

Move cursor up this command move the cursor up one line.

ctrl/I

Tab forward to next input area.

ctrl/Z

Get next record this command may be executed in the edit mode, and n some cases, in the add mode.

In the edit mode, position the cursor to a data area which has been defined as an index. Next, enter ctrl/Z. The next record in that index will be displayed for editing. This command is used to browse forward in the file. The browsing may be done using any data areas which have been defined as indexes.

In the add mode, this command is used to browse an external form by placing the cursor on the data area which has been defined as the contact key and then entering ctrl/Z.

ctrl/W

Get previous record this command is completely analogous to the ctrl/Z, get next command, except that the browsing is in the other direction.

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ctrl/O	Delete current record in ADD mode, the form will be cleared of current data. In EDIT mode, the current record will be deleted and the form cleared.
ESCape	This command will end processing in the enter data service. If a record is being displayed, it will not be written to the file. If in add mode, the current record will not be added if in the edit mode, the current record will not be rewritten to the file.
Q	HELP this command, when depressed with the cursor in the first column of a data area, will cause help explanation to be written to the screen. When you finish with the help text, a return will cause the previous form to be redisplayed.
ctrl/A	Move the cursor a word backward within the current data area.
ctrl/F	Move the cursor a word forward within the current data area
ctrl/S	Move the cursor back one character. This command will cause the cursor to jump to the previous data area when it runs off the beginning of the current data area.
ctrl/X	Move the cursor down to the data area most nearly directly below.
ctrl/L	Move the cursor ahead one character. This command will cause the cursor to move ahead to the next data area when it runs off the end of the current data area.
ctrl/^	Move the cursor back to the end of the previous data area.
ctrl/V	Turn the character insert on or off.
ctr1/G	Delete character at the current position.

## PRODUCE REPORTS

PRODUCE REPORTS	
Form Name: Report Name:	
ENTER A STEP NUMBER:	
Press RETURN to continue, Q for HELP, or ESC to EXIT	
This is the main produce reports menu. The form r displayed for information and are not entered from th	name and report name are nis menu.
ENTER A STEP NUMBER	
Enter the options to 1) set selection values, 2) e produce the final report.	nter printout details or 3)
Q HELP explanation will be displayed.	
ESCape to exit.	
PRODUCE REPORTS - Printout Details	
TITLE:	
NUMBER OF REPORT LINES PER PAGE	
TOTAL LINES PER PAGE (0 = Use form feed)	
(Blank = Printer, CON: = Console) MULTIPLE FORMS ON ONE PAGE: (FIXED reports only) NUMBER OF FORMS ACROSS: SINGLE FORM WIDTH:	(Columns)
Form Name: CALENDR Report Name: INVOICE	•
You may make changes by typing a new value.	
Press RETURN to continue, ? for HELP, or ESC to EXIT	

On the Printout Details menu, the form name and report name are displayed for information.

Q Help explanation will be displayed.

ESCape exit to produce reports menu.

## TITLE:

Here you may enter a title for the report. It will appear at the top of each page of the report.

## NUMBER OF REPORT LINES PER PAGE \_\_\_

The answer to this question will determine how many lines of the report will appear on each page. The difference between this entry and the total lines per page is the length of the combined top and bottom margins.

#### TOTAL LINES PER PAGE ....

This is the actual page length in lines. If your printer has a form feed, you may use it by entering 0 here

## FILE NAME FOR REPORT \_\_\_\_\_

This question will determine the destination of the report. A blank here will send the output to the printer. The entry of CON' will route the report to the console. Any other 'nput will be used as the name of a CP/M file and the report will be listed to the file. File output may be subsequently edited with WordStar or used with some other software.

## NUMBER OF FORMS ACROSS: \_\_

This question is applicable to F XED-type reports only and is used to control multi-up report output (as with multiple labels across a page).

## SINGLE FORM WIDTH: \_\_\_

This question also is applicable to FIXED-type reports only and is used to set control for multi-up output. The input here is the width in columns of an individual form (or label). The width is measured from the left edge of one form to the left edge of the next, thus including the space between.

## Appendix G

## Osborne Help Text

This appendix contains the text for the help explanations which are provided by PERSONAL PEARL. If the HELP tile (PRHELP TXT) is not available during processing, the number for the message will be displayed rather than the text for the explanation. The following are the normal on-screen HELP explanations with the associated number.

## 1 DESIGN FORMS

## PERSONAL PEARL -- DESIGN FORMS OVERVIEW

The PERSONAL PEARL DESIGN FORMS service allows you to construct a FORM on the screen to use later while entering or retrieving data. This involves the following steps.

- 1 Designing your form layout on a blank screen
- 2 Defining "data input areas" on the form where data is entered and stored as a record
- 3 Selecting those data input areas that can be used as a general index to identify and find individual records.
- 4 Identifying the data input areas requiring data from another form
- 5 Installing the finished form so data can be entered.

## 2 DESIGN REPORTS

## PERSONAL PEARL -- DESIGN REPORTS OVERVIEW

The PERSONAL PEARL DESIGN REPORTS service allows you to construct a REPORT layout Designing a report requires the following steps.

- Designing your report layout on a blank screen
- 2 Defining "data output areas" on the report where data will be printed on the report
- 3 Selecting the sort order for the report.

- 4 Identifying the data output areas which require data from another form.
- 5 Instailing the finished report.

#### 3 ENTER DATA

#### PERSONAL PEARL -- ENTER DATA OVERVIEW

You may use the ENTER DATA service to add or edit data on a PEARL data file You may also use this program to browse through your data file one record at a time.

Your first step will be to select the form you wish to process. The next step will be to select the menu option to enter data.

Press CONTROL Q for additional help on each menu, or enter a ? while the cursor is in the first character of any input area.

## 4 PRODUCE REPORTS

## PERSONAL PEARL -- PRODUCE REPORTS OVERVIEW

You may use the PRODUCE REPORTS service to create printed reports from data you have entered on your PEARL data files. You may also create a disk file for the report which may be listed later or edited with a word processing system and/or included in other reports you are preparing with your Osborne computer.

During the report process, you may need to sort your data file, if you specified a sort priority during the design of the report. If so, you will be requested to place the SORT disk on A.

Prior to creating the report you may choose low and high selection values so that only selected records will be included on your report. Prior to creating the report you may also specify a disk file name on which to place the final report.

## 10 ENTER FORM NAME

For each form defined for PERSONAL PEARL, you supply a NAME and a DESCRIPTION. You may enter the name of a previously defined FORM (which appears in the form directory), or you may create a new NAME using up to seven characters.

Pressing an O white depressing the CTRL key (CTRL/O) will enable you to delete any program from the directory once entered. Similarly a CTRL/C will let you view the next page of the directory as it fills up. A CTRL/R will let you page backwards.

## 11 REFER TO 10



#### 12 ENTER PROGRAM DESCRIPTION

The FORM DESCRIPTION is provided as an aid to you later on when you select a FORM from the PEARL FORM DIRECTORY. You provide the DESCRIPTION when you add a new FORM.

## 13 ADDED

The FORM has been added to the DIRECTORY. You may now press RETURN to continue with the FORM you have added, or you may enter a different name.

## 14 OK TO DELETE (Y/N)

Press "Y" if you wish to delete the FORM name you have entered, or press "N" if you do not want to delete the FORM

## 18 SELECT SERVICE NUMBER

Enter 1 to design the layout of a form to be displayed during data entry

Enter 2 to design the layout of a report to be produced from the entered data.



Enter 3 to enter data into the designed form.

Enter 4 to produce the designed report.

## 19 DESIGN FORMS SUBMENU

If you are designing a new form, enter step 1. Select each of the subsequent steps until the form is installed. You may return to any step if you need to make additional changes.

More help is available after you have selected any of the above steps. Note that steps 3 and 4 are optional.

#### 20 FORM LAYOUT

In order to LAYOUT a FORM, enter the form layout similar to the way you would layout a FORM on a piece of paper in a typewriter. The areas into which data will be entered can be specified by using underscores ("\_" character) for textual information, or a "9" (for numeric) information. For example:

NAME: \_\_\_\_\_AGE: 99 SALARY: \$999,999.99 BIRTHDATE: mm/dd/yy

By including common notations like "\$," "/," or punctuation, you can insure you have enough character space for entering data into the input area. The Control Key Commands below can be activated by pressing the designated letter while depressing and holding the CTRL key down. ESC and? operate alone.

# 21 ATTEMPT TO INSTALL WHEN NO DATA INPUT AREAS SPECIFIED

Your form cannot be installed until at least one data input area has been defined using option 2 of the selection menu.

#### 30 SELECT DATA INPUT AREAS

After you have laid out your form, you must choose the input areas into which data will be placed. Do this by placing the cursor on the first character in the data input area. Then press the CTRL/8 combination. The data input area will be highlighted, and you will be prompted to give the data input area a name (used for later reference). Specify whether the data is always required to complete information on the form and also whether the data will be textual, numeric, or a date.

## 31 INPUT AREA NAME

Enter a one to seven character name that can be referenced later on when you design reports and other forms. For example: "NAME", "ADDRESS", "PHONE", "AMOUNT", "TOTAL", "CUST", "CUST2", "T4', and so on. The first character must be a letter.

## 32 IS INPUT IN THIS AREA ALWAYS REQUIRED

Enter "Y" to prevent entry operator from leaving this area blank.

Enter "N" to allow this area to be left blank.

## 33 INPUT AREA TYPE

The "C" option allows characters including numbers to be entered. The 'N' option says that the data input area is numeric and so may be used in calculations. The 'D' option says the data input must be a date.

## 34 COMPUTATIONS FOR INPUT AREA

A FORMULA may be entered to compute a data input area based on other areas in your form. You may use "+" to add values; "-" to subtract values; "\*" to multiply two values together; and "/" to divide one value into another.

You may also use "(" to show the order in which a computation is to occur. For example:

(A+B) \* C means to add A and B and the total is to be multiplied times C



If no parentheses are used, multiplications and divisions will occur before additions and subtractions.

## 40 SELECTING INDEX AREAS

Position on any data input area containing data to be indexed in order to find and identify individual records. Then press a CTRL/B combination. You will be prompted to enter the options associated with an indexed area. Commonly selected categories include names, I.D. numbers, and so forth.

Designating an area to be used as an indexed area lets you go directly to the FORM or a set of FORMS by simply typing a keyword or number contained in the indexed area.

For example if an input area contains names, and the input area name has been designated as an indexed area, you may go directly to the form or set of forms starting with the name SMITH or JONES.

Enter a CTRL/P to highlight those input areas which have already been specified as indexed areas.

## 41 IS INPUT AREA AN INDEX (Y or N)

Enter "Y" to designate that the input area is an indexed area, or "N" to designate the area is not indexed.

# 42 WILL INPUT AREA CONTAIN A UNIQUE VALUE (Y or N)

Enter "Y" to show there is one and only one corresponding record for each data entry placed in the input area.

Enter "N" to show there may be duplicate names or numbers entered in this input area.

For example, you would probably never use the same customer id number for two different customers (enter Y). On the other hand you may find that two of your customers nappen to have the same name (enter N).

## 50 INPUT AREA DATA FROM OTHER FORMS



PERSONAL PEAR\_ allows you to "call" information from other forms when you are entering data.

For example if one form contains summary information about customers including a name, address, and phone number, and another form is used to

record sales information for customers, you might want to get the address and phone number from the summary form and piace it in your sales form. This is done by specifying that the data should be the same in both forms based on the customer name.

When you use this option, the input area name on both forms must be the same.

For example, use CNAME (Customer NAME) on both forms to call the area into which customer name will be placed. You might specify CADDR and CPHONE on both forms also to call the address and phone number.

Then use this option to call data input areas from the other form Place your cursor on the area which also appears in the other form Then, press CTRL/B to specify the way in which the data is to be used.

You may press CTRL/P to highlight all of the input areas on your current form relating to other forms.

## 51 THE OTHER FORM NAME

Enter the name of the FORM containing the data input area you wish to reference.

# 52 WILL DATA IN THIS AREA IDENTIFY RECORDS FROM THE OTHER FORM

Enter Y if data in this area is used to identify and find specific records from the other form. Enter N if this area is data is to be transferred from the other form.

## 53 IS INPUT FROM OTHER FORM TO BE DISPLAYED ONLY (Y or N)

Enter Y if the data obtained from the other form is to be displayed, but is not to be entered in this form. Enter N if the data is to be DISPLAYED and then ENTERED in this form. In the latter case you may change the data after it has been obtained from the other form.

## 59 DESIGN REPORTS SUBMENU

If you are designing a new report, enter option 1. Then select each of the subsequent steps until the report is installed. You may return to any step if you wish to make additional changes. More HELP is available after you have selected any of the above steps.

## **60 ENTER REPORT NAME**

Enter the name of the report you wish to access, or enter a new name if you are creating a new report.

## 61 REFER TO 60



The new report has been added to your directory. You may now enter or change the report layout by selecting the report for processing. Press return to select the new report.

## 64 OK TO DELETE (Y/N)

Enter "Y" to delete the report from your report directory, or enter "N" to keep the report.

## 65 CREATE NEW REPORT SELECTION MENU

Use option 1 to create a report which will use the same layout as your input form which you may change.

Use option 2 to copy an existing report. Once you have made a copy of the report, you may change the layout of the report.

Use option 3 to create a new report

## 66 ENTER DESCRIPTION OF THE REPORT

The description you enter here will appear in the report directory

## 67 REPORT TO BE COPIED WAS NOT LOCATED

The report to be copied could not be located on disk. You need to either enter a different report name, or press ESCAPE to return to the report directory.

## 68 REPORT TYPE

Use a FIXED type report when you want each form to appear on a separate

Use a LIST type report when you wish to summarize the data from the input forms, placing as many lines as possible on each page.

When you create a LIST type report, you may specify page headings, footings, summary subtotals, and grand totals.

Use the SuperCalc spread sheet option when you wish to create a SuperCalc spread sheet input file from your PEARL data file.

When you use this option, the data output areas in the report will become "cells" in the spread sheet.

## 69 REPORT LOCATED

The name of the report you entered has been added to the directory. The report layout was already on a disk fite even though the name of the file was not in the report directory. You may now change the report layout by selecting the same name.

## 70 DUPLICATE NAME

The name of the report you have entered has already been used as a report name by another program PEARL does not allow the same report name to be used by two different programs. Please choose another name.

## 71 ENTER NAME OF REPORT TO COPY

Enter the name of a report you have previously defined. If you do not remember the names of your reports, please press ESCAPE to return to the report directory and you will be able to view the report names.

## 72 INPUT FORM NOT LOCATED

The input FORM for this program has not yet been created. Use the DESIGN FORMS option to create the form, then select this option or choose a different option.

## 80 LAYOUT FIXED TYPE REPORT

In order to ayout a FIXED type report, continue in the same manner you would to tayout a FORM,

Once you have finished the layout for the report, you may then identify the areas on the report where information from your data file will be placed during printing.

## 82 LAYOUT SUPERCALC TYPE REPORT

In order to create a SuperCalc spread sheet file, a report is created from your data file. However, instead of being printed, the information you indicate is placed in a file to be read in by SuperCalc for subsequent processing by that program.

The SuperCalc report is similar in format to the LIST type report. Each set of detail, subtotal, or grand total information may be placed as a row of data in the SuperCalc spreadsheet. Within these three groups each output area you specify will be placed as a cell in the spread sheet beginning with the second cell in each row.

## 83 LAYOUT A LIST TYPE REPORT

A list type report is used if you want to list summary information, and to compute totals or subtotals from the information in your form file. You may also specify headings and footings for each page of the report

As you layout a LIST type report, you must specify the group category you are entering. The categories are: HEADING, DETAIL, SUBTOTAL, TOTAL and FOOTING.

HEADING this information will appear at the top of each printed page

DETAIL this information will appear in the report for each input form

processed.

SUBTOTAL this information will appear in the report each time the first

sort field changes.

TOTAL this information will appear at the end of the report.

FOOTING this information will appear at the bottom of each page.

In order to change the level of the group category, press the CTRL/C combination. The current type of information being entered will appear in the bottom left-hand corner of the screen.

Please note that once the level being entered for data has been set for a line, it may not be changed unless the entire line is deleted, in which case, it can then be retyped. Once the category level has been set, the indicator on the bottom of the screen will change automatically during cursor positioning.

## 84 NAME AN OUTPUT AREA

Specify the name of a data input area in your input form in order to print information from your data file.

If the output area is to be computed during creation of the report use a new name, then specify the formula to be used to compute the area based on other data areas in the input form.

## 85 DESIGNATE REPORT OUTPUT AREAS

In order to specify a new data output area in a report, place the cursor on first the character in the output area, and then press CTRL/B. At this time, the full output area will be highlighted, and you will be asked to name the area.

If the output area is to contain data in an input form, use the SAME NAME you used to name the data input area. If the new area is to be computed, or if the area is a computed value, then you should assign a NEW NAME.

All of the areas specified for output are highlighted on your screen.

#### **87 REPORT COMPUTATIONS**

A FORMULA may be entered to compute an output area based on other areas in your form. Those other areas need not be present on the report as long as they have been defined on the input form.

For example: if two areas on your input form are named HOURS and RATE, you could compute the product of these two values and place them in your report under the new name of GROSS by entering GROSS as the output area name, and using FORMULA HOURS \* RATE.

In your FORMULA, you may use "+" to add values; "-" to subtract one value from another; "\*" to multiply two values together; and "/" to divide one value into another. You may also used "(" to indicate the order in which the computation should occur.

For example, (A+B) \* C causes area A and B to be added and then the total to be multiplied times area C. If no parentheses are used, multiplications and divisions will occur before additions and suptractions.

## 88 EXTERNAL FILE CONFLICT

You may not compute a value also specified as being a data input area from another form,

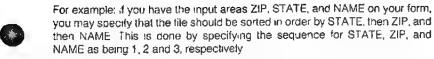
## 89 SYNTAX

There is a syntax error in your formula. The type of the error may be as follows:

- 1 Unbalanced parenthesis,
- 2 An input area name is too long,
- 3 Order of input area names and arithmetic operators (i.e., +, -, /, \*) is invalid

## 90 SPECIFYING SORT SEQUENCE

Use this opt on to specify the order in which the forms on the input file will be placed on your report.



The direction of a sort may be reversed by typing an R below the area specified

If no SORT priority is specified, then the report will be in random order as it was entered on the data file

#### 95 DATA FROM OTHER INPUT FORMS

Use this option to call data from other forms when a report is being created. Place your cursor on the area which also appears in the other form. Then press CTRL/B to specify the way in which the area is to be used.

#### 96 THE OTHER FORM NAME

Enter the name of the FORM containing the information you wish to include in the report.

# 97 WILL DATA IN THIS AREA IDENTIFY THE OTHER FORM'S RECORDS

Enter Y if data in this area is used to identify and find specific records from the other form. Enter N if this area's data is to be transferred from the other form

## 102 UPDATE/REPORT SERVICE MENU

Enter 1 to enter or edit data.

Enter 2 to create a report from your data file.

## 103 FILE MAINTENANCE MENU

## FILE MAINTENANCE SERVICE OPTIONS

- 1 FILE SUMMARY DATA--tells you how many records are on your data file, the file version number, the amount of unused space in your file due to deletion of data records, etc.
- REBUILD INDEX--will rebuild the index to your data file and will recover data records added or edited during your last update if your files were not closed properly during update due to an external malfunction. This option is required if you have changed the index specifications for an existing data file.

- 3 COMPACT DATA FILE--may be used to recover unused space in your data file which has resulted from the deletion or editing of data on the file. Use the FILE SUMMARY DATA option in this menu to determine how much space you will recover by using this option. Use of this option also causes data for input areas which have been deleted from a form to be removed from data file.
- 4 CREATE DATA FILE--use this option to create a data file with no data in it. This option allows you to maintain multiple data files using the same form layout to update the file.
- 5 TRANSFER FORM CHANGES--use this option to transfer the form changes to an existing data file. You must use this option if you have re-installed an existing form, and you have data files using the form on diskettes other than the development diskette.
- 6 TRANSFER PROGRAM FILES--use this option to move ENTER DATA and PRODUCE REPORT program files to a production diskette from the development diskette.

## 104 SELECT PROGRAM NAME

Enter the name of the program you wish to process. If the name does not exist in the menu, you must return to the design forms or design reports program to add the name to the directory.

## 105 SELECT NAME OF REPORT TO PROCESS

Enter the name assigned to the report you wish to create. If you wish to create a new report layout, you must exit and use the PEARLDR program to design a new report.

## 120 PRODUCE REPORTS MENU

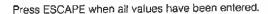
Enter 1 to specify which forms should be included in the report. Enter 2 to change the page size for the report, to send the report to a file or to the screen, or for label processing to specify the horizontal count for labels. Enter 3 after other options have been specified to create your report.

## 125 ENTER SELECTION VALUES

You may specify which forms will be included in your report by entering a low and a high value for each input f'e.d in your input form.

Only those forms which have a value in the fields which is greater than or equal to the low value specified, AND less than or equal to the high value specified will be included in the report.

If you wish, you may enter only a low or a high value for an input area. That is, both a low and high value are not required



## 126 EDITS COMPLETE FOR SELECTION VALUES

Enter Y to proceed or N to continue editing current screen

## 131 NUMBER OF REPORT LINES PER PAGE

The number of report lines per page applies only to LIST type reports. The number you enter specifies the number of lines which will be printed before skipping to the top of the next page.

## 132 TOTAL LINES PER PAGE

The total number of lines per page is the number of lines between the top of each page. If your printer is equipped with a FORM FEED option, enter a 0. If you are outputting to the console, this value is the number of lines which will be output before pausing to allow you to view the current page.

## 133 FILE NAME FOR REPORT

No value entered will cause your report to be printed on the CP/M Lst device assigned to your system. Enter CON: in order to output to your video screen Your other option is to specify a valid CP/M file name e.g., B-REPORT DOC. If no file name is specified for a SuperCalc report, the output will automatically be named TEMP.CAL.

## 134 RUN TIME TITLE

The title you enter here will be printed at the top of each page of the report you are creating. It applies only to LIST and FIXED type reports.

## 135 NUMBER OF FORMS ACROSS

This option is for form processing when you wish to print 2 or more up labels. This number specifies the number of labels wide to be printed.

## 136 SINGLE FORM WIDTH

This value specifies the number of columns wide each label is when multiple up labels are being produced.

## 159 ENTER DATA HELP MENU

## 160 ENTER DATA

from HELP processing.

#### ENTER DATA \_ CONTROL KEY COMMANDS

```
U - Save/replace record
N - Duplicate last item
P - Print current record
U - Get previous record
U - Get previous record
U - Get previous record
U - Delete current record
ESC - EXIT

S or H - Cursor left
D or L - Cursor right
R - Page back
E or K - Cursor up
A - Tab back
X or J - Cursor down

Press RETURN for next page or ESC to exit
```

While entering the data, you will find yourself in either ADD or EDIT mode.

If you are in ADD mode, then enter data into the data input areas until you are done. Then press the CTRL/U key or press RETURN twice to add the record. The data input areas will then be cleared so you may begin entering data for the next record.

You may enter EDIT mode by pressing the CTRL/B key combination.

If you are in EDIT mode, you must first get a record from the data file in order to change or delete it. This can be done by entering data in any indexed area, or by pressing the CTRL/Z (get next record). You may then DELETE the record from the file (CTRL/O), or EDIT the record and then replace it on the data file (CTRL/U).

## 161 NO RECORD BEING EDITED



In order to delete a record, first bring the record up for changing A delete request cannot be implemented now because no record has been obtained for deletion.

## 162 DELETE (Y/N)

Enter a "Y" if you wish to delete the current record. Otherwise, enter a "N" to continue processing and not delete the record.

#### 163 ENTER NEW DATA

PERSONAL PEARL is ready for you to enter data into your data file. Use the RETURN or TAB key to move from area to area during data entry. Press CTRL/O or press RETURN twice on the last field to save the record.

## 164 ABANDON EDITS (Y/N)

Enter "Y" if you wish to abandon the edits to the current screen areas.

Enter "N" if you wish to continue editing the current data record.





PERSONAL PEARL is waiting for you to enter key work or a number in an indexed input area so it can identify and get get a record from your data file to be displayed, edited, or deleted. You may also use CTRL/Z to get the next record

## 166 EXIT?

Enter "Y" to end ADD/EDIT processing.

Enter "N' if you wish to continue entering data into your data file.

#### 167 CONTINUE EDITING

Enter CTRL/B to switch to ADD mode CTRL/Z to get next record, CTRL/W to get previous record.

#### 168 EDIT OPTION

You have tried to use an EDIT function in ADD mode. Switch to edit using CTRL/B.



This data area is required. You must enter data into this area before the data record can be added.

## 170 RECORD ADDED

The data you have entered has been added to your data file. You may now enter data for another record, or use the CTRL/B key to change to EDIT mode.

#### 171 RECORD DELETED

The data record has been deleted. Enter CTRL/B to return to ADD mode, CTRL/Z to get next record, CTRL/W to get previous record, or enter a KEY character, word, or number in an indexed area to get another record to EDIT.

#### 172 RECORD REPLACED

The data record has been replaced Enter CTRL/8 to return to ADD mode, CTRL/Z to get next record, CTRL/W to get previous record, or enter a KEY character, word, or number in an indexed input area to get another record to EDIT.

## 173 DUPLICATE KEY

The record cannot be added since the area specified is UNIQUE to another record already on your file.

#### 174 NUMBER TOO LARGE

Not enough digits in the field to fit the numeric value entered. Enter a smaller number.

## 175 INVALID DATE

Enter date in format mmddyy or mm/dd/yy. For example; 12/31/81,

## 176 NUMBER REQUIRED

Non-numeric found in number. Enter a number.

## 177 RECORD NOT FOUND

A record on another file cannot be located based on the KEY character, word or number in the index area you have chosen. Enter a valid reference value, or CTRL/Z or CTRL/W to get next or previous record.

## 178 END OF FILE

You have come to the end of or the beginning of the file.

## 181 NO UPDATE MODULE



You have 1) attempted to process a file prior to installation, or 2) the required program is on another disk. Either INSTALL your program and continue, or place the appropriate disk with the desired program in your drive and try again.

## 185 REPORT NOT INSTALLED

The report you have selected was not located. In order to produce your report, you must INSTALL it first. Return to the DESIGN REPORTS program and install the report.

		•	

## Appendix H

## Using SuperCalc with PERSONAL PEARL

## INTRODUCTION

While PERSONAL PEARL can produce reports involving detailed mathematical calculations, the scope of mathematical operations on PERSONAL PEARL data can be greatly enhanced by interfacing with SuperCalc from Sorcim.

SuperCalc (Version 1.07 compatible) is a very powerful spreadsheet program for performing calculations, including conditional expressions, exponentials, and trigonometric functions. It can be used as a stand-alone program when the input data is not voluminous and is readily available. However, it becomes even more useful when it can take advantage of the live data collecting ability of PERSONAL PEARL. Data from many sources can be gathered and summarized by PERSONAL PEARL, and written to files that can be used by SuperCalc.

SuperCalc has the capability of loading many worksheets, wholy or partially, into a master worksheet. Refer to the SuperCalc manual for a detailed discussion of designing worksheets with text and calculations. It is recommended that the master worksheet be 'protected" in all cells which are not to have data loaded into them to prevent unwanted overlaying of calculations.

## HOW TO INTERFACE WITH SUPERCALC

PEARL interfaces with SuperCalc by outputting numeric data to a disk file compatible with SuperCalc. The disk file is created using a PEARL "SuperCalc-type" report. Once this report has been created, the user may then design a master worksheet with SuperCalc and load the data into the worksheet for analysis.

- Design a SuperCalc-type report in PERSONAL PEARL.
- Produce the report.
- Design a Master Worksheet with SuperCalc.
- Protect all calculation and text areas in the Master Worksheet.

- Load the Master Worksheet.
- Load the PEARL data report(s) into the appropriate locations in the Master Worksheet.
- The Master Worksheet is now ready for calculations, what-if manipulations, etc.

## An EXAMPLE: Restaurant Cost Analysis

To illustrate the use of PERSONAL PEARL with SuperCalc, we will create a "Restaurant Management System". The details of the system are given in the form and report layout reports at the end of this section

Most of the reporting in the system is done by PERSONAL PEARL. However, we wish to analyze the food and beverage costs and examine various "what if?" projections of the data. To do this, we will construct a Master Worksheet with SuperCalc, then merge data from two PERSONAL PEARL forms into the worksheet for analysis.

## THE PEARL FILES

## **DAILY REVENUE**

Our first input form (JOHN - Figures 1 and 2) records daily revenue for John's Restaurant, in which revenue for breakfast, lunch, dinner and the bar are entered. PERSONAL PEARL calculates the food total and the revenue total for each day.

The report (JOHN1 - Figure 3), for this first input form subtotals the six categories (total revenue, bar, food total, breakfast, lunch and dinner) on a monthly basis. The values are written to a SuperCalc report file (JOHN1 CAL) with the first month's data going into cells 84, C4, D4, E4, F4, and G4. The second month's data goes into B5 through G5, etc. For our SuperCalc master spreadsheet, we will use columns C and D (Bar and Food Totals).

## **DAILY PURCHASES**

The second input form, (JONPUR - Figures 4 and 5) records daily food and beverage purchases for John's Restaurant, in various categories. This information will be used to calculate food and beverage cost percentages. Food and beverage purchases are recorded manually, and the totals are calculated by PERSONAL PEARL.

The report (JONP1 - Figure 6) for this input form subtotals the total daily food purchases and the total daily beverage purchases on a monthly basis and records the information in columns B and C of the SuperCalc file JONP1.CAL.

## THE SUPERCALC MASTER WORKSHEET



The master worksheet is used to calculate food and beverage cost percentages on a monthly basis. Other SuperCalc reports could be created from the SuperCalc files generated by PERSONAL PEARL using different master worksheets, if desired Still other reports could be created by extracting different sets of data from the input forms.

This worksheet (COSTS.CAL - Figure 7) calculates cost percentages for both food and beverages using inputs from the daily revenue report and the daily food and beverage purchases report

#### The Formulas

The format in Figure 7 has been set to display formulas and the column widths have been adjusted accordingly. Cell D6 has the formula: "IF(B6=0,0,C6\*100/B6)" and there are similar formulas in D7 through D17 and in G6 through G17. The formula means that.

- If there was no income for the month (that month has not yet been processed), then
- Store 0 in the cell, otherwise
- Multiply the expenses by 100, and divide the result by the income.

Notice the formulas in D19 and G19 which calculate the average percentages by adding up the monthly percentages and dividing by the number of months that had any revenue.

## The Final Master Worksheet

After all of the formulas have been entered, the display is changed to show results and the column widths and formats are set to display the data in the correct format (see Figure 8). Al. of the worksheet except the data areas is protected to avoid accidents and the form is saved on disk.

## Using the Worksheet

First, the SuperCalc master file "COSTS" is loaded:

## /L,B:COSTS,ALL

Then the data from the PERSONAL PEARL files is loaded (the loading order does not matter). The data worksheets are loaded as partial worksheets, by

specifying the starting and ending cell ids. Note that the location at which the data is to be loaded is specified by starting cell id.

/L,B:JOHN1,P,D1:D12,B6

/L,B:JOHN1,P,C1:C12,E6

/L,B:JONP1,P,B1:B12,C6

/L,B:JONP1,P,C1:C12,F6

SuperCate will automatically perform all of the calculations (Figure 9).

FORM LAYOUT (PAGE 1) FOR JOHN
DAILY REVENUE FOR JOHN'S RESTAURANT
MONTH:1 MONTH #: _2 WEEK #: _3
WEEKDAY:A DAY #: _5 YEAR:6
BREAKFAST:7
REVENUE TOTAL:12

Figure 1

## INPUT AREA ATTRIBUTES:

DATA AREA NAME: MONTH DATA AREA TYPE: CHARACTER

> 123456789 REQUIRED DATA DATA AREA IS UNIQUE INDEX

2 DATA AREA NAME: MON DATA AREA TYPE: CHARACTER

12

REQUIRED DATA

3 DATA AREA NAME: WEEK DATA AREA TYPE: CHARACTER

DATA AREA NAME: WEEKDAY DATA AREA TYPE: CHARACTER

123456789

DATA AREA NAME: DAY DATA AREA TYPE: CHARACTER

12

REQUIRED DATA

DATA AREA NAME: YEAR DATA AREA TYPE: CHARACTER

1234

DATA AREA NAME: BRK DATA AREA TYPE: NUMBER

DATA AREA NAME: LUN DATA AREA TYPE: NUMBER

DATA AREA NAME: DIN DATA AREA TYPE: NUMBER 9999 1234

10 DATA AREA NAME: FOOD DATA AREA TYPE: NUMBER 99999 12345 COMPUTATION: BRK+LUN+DIN

DATA AREA NAME: BAR DATA AREA TYPE: NUMBER 99999 12345

12 DATA AREA NAME: TOT DATA AREA TYPE: NUMBER 99999 12345 COMPUTATION: FOOD+BAR

## DAILY REVENUE FOR JOHN'S RESTAURANT

MONTH: AUGUST MONTH #: 8 WEEK #: 1

MEEKDAY: MONDAY DAY #: 2 YEAR: 1982

BREAKFAST: 32
LUNCH: 86
DINNER: 111

FOOD TOTAL: 229

BAR: 223

REVENUE TOTAL: 452

Figure 2

Figure 3

REPORT DESCRIPTION: SUPERCALC REPORT FOR FORECASTING REPORT TYPE: SUPERCALC

SORT SEQUENCE: MON

## REPORT OUTPUT AREA ATTRIBUTES:

DATA AREA NAME: STOT 1 COMPUTATION: STOT+TOT

2 DATA AREA NAME: SBAR 99999 12345 COMPUTATION:SBAR+BAR

DATA AREA NAME: SFOOD 3 99999 12345 COMPUTATION: SFOOD+FOOD

DATA AREA NAME: SBRK COMPUTATION: SBRK+BRK

5 DATA AREA NAME: SLUN 99999 12345 COMPUTATION: SLUN+LUN

DATA AREA NAME: SDIN 99999 12345 COMPUTATION: SDIN+DIN

rear:1	MONTH:2	MONTH #: _3	DAY: _
F000		BEVERA	
OTHER:	5 7 9 11	BEER: WINE: LIQUOR: OTHER:	6 9 10 11
	Figi	ıre 4	
AREA ATTR	IBUTES:		
	NAME: YEAR TYPE: CHARAC	TER	
	ATA NAME: MONTH TYPE: CHARAC	TER	
12345678 REQUIRED D DATA AREA DATA AREA		TER	
12 REQUIRED D DATA AREA	ATA IS NON UNIQU	E INDEX	
DATA AREA DATA AREA	NAME: DAY TYPE: CHARAC	TER	
12 REQUIRED D	ATA		

•	5	DATA AREA NAME: MEAT DATA AREA TYPE: NUMBER 9999 1234
	6	DATA AREA NAME: BEER DATA AREA TYPE: NUMBER 1234
	7	DATA AREA NAME: PROD DATA AREA TYPE: NUMBER 999 123
	8	DATA AREA NAME: WINE DATA AREA TYPE: NUMBER 9999 1234
	9	DATA AREA NAME: STAP DATA AREA TYPE: NUMBER 9999 1234
	10	DATA AREA NAME: LIQ DATA AREA TYPE: NUMBER 9999 1234
	11	DATA AREA NAME: FOTH DATA AREA TYPE: NUMBER 9999 1234
	12	DATA AREA NAME: BOTH DATA AREA TYPE: NUMBER 999 123
	13	DATA AREA NAME: FTOT DATA AREA TYPE: NUMBER 99999 12345 COMPUTATION:MEAT+PROD+STAP+FOTH
•	14	DATA AREA NAME: BTOT DATA AREA TYPE: NUMBER 99999 12345

COMPUTATION: BEER+WINE+LIQ+BOTH

1	DAY:	MONTH #: 1	JANUARY	MONTH;	1982	YEAR:
	ES	BEVERA			FOOD	
	D	BEER:			T:	
	35 128	WINE: LIQUOR:		35 200	DUCE: PLES:	
	0	OTHER:		40		
	163	TOTAL		401	AL:	T01
		Figure 5				
		JONPUR	FORM NAME:	: JONPI,	T NAME:	REPOR

Figure 6

BEVERAGES: \_\_\_\_2

REPORT DESCRIPTION: SUPERCALC REPORT FOR PURCHASES REPORT TYPE: SUPERCALC SORT SEQUENCE: MON

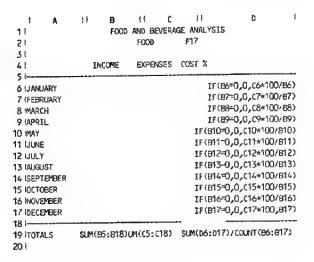
## REPORT OUTPUT AREA ATTRIBUTES:

FOOD: \_\_\_\_\_1

1 DATA AREA NAME: SFTOT 99999 12345 COMPUTATION:SFTOT+FTOT

SUBTOT -

DATA AREA NAME: SBTOT
99999
12345
COMPUTATION: SBTOT+BTOT



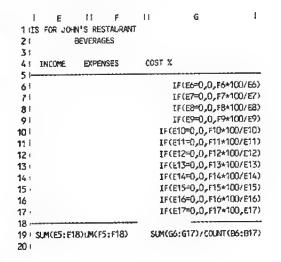


Figure 7

A 		II C AND BEVERAG FOOD	II D SE ANALYSIS		li f Restaurant Everages	11 G 1
41	INCOME	EXPENSES	COST %	INCOME	EXPENSES	COST %
6 JANUARY			.00			.00
7 FEBRUARY			.00			.00
8 MARCH			_00			.00
9 IAPRIL			.00			.00
10 IMAY			.00			.00
11 JUNE			.00			.00
12 IJULY			.00			.00
13 AUGUST			<b>.0</b> 0			.00
14 ISEPTEMBER			.00			.00
15 IOCTOBER			.00			.00
16 INOVEMBER			.00			.00
17 IDECEMBER			.00			.00
19 ITOTALS 20 !	(	D	O ERROR	t	) (	ERROR

Figure 8

1 A 1! 21 31		i C D BEVERAGE DOOD	II D ANALYSIS		II F RESTAURANT /ERAGES	lı G	1
41	INCOME (	expenses (	OST %	INCOME	EXPENSES	COST X	
6 IJANUARY	7547	3226	42.75	4455	1221	27.41	
7 FEBRUARY	6566	2725	41.50	5212	1547	29.68	
8 IMARCH	8111	3210	39.58	5000	1498	29.96	
9 IAPRIL	7878	3179	40_35	5521	1708	30.94	
10 IMAY	8668	3397	39.19	5835	1769	30.32	
11 JUNE	10046	3879	38.61	6483	1879	28.98	
12 IJULY	10304	3979	38.62	6706	1869	27.87	
13 AUGUST			.00			.00	
14 ISEPTEMBER			.00			.00	
15 loctober			.00			.00	
16 NOVEMBER			.00			.00	
17 DECEMBER			.00			.00	
19 ITOTALS	68005	27192	40.13	45109	13270	29.42	

Figure 9

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-C-	
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